Access	DB#	
Access	UD#	

SEARCH REQUEST FORM

cientific and Technical Information Center 57382

Scientific and recipiton timormation Center \mathcal{O}
Requester's Full Name And Hines 111 - 2 21 Examiner =: Date: 1/3/01 An Unit: 1645 Phone Number 305-0487 Serial Number: 091335, 581
Mail Box and Bldg/Room Location: (24) 943/10 Results Format Preferred (circle): PAPER DISK E-MAIL
If more than one search is submitted, please prioritize searches in order of need.
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc. if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.
Title of Invention: Veptide fre toxic Shock Syndrome
Inventors (please provide full names): Jason D. Bannan, Kumar Visyanathan
JOHN B. Zabriskie
Earliest Priority Filing Date: 61899
For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.
Alease search the inventor and
Mease search SER ID NO: 3 and 34
Shands
Point of Contact:
Mona Smith Technical Info. Specialist CM1 12C14 Tel: 308-3278

Vendors and cost where applicable STAFF USE ONLY Type of Search STN ___ NA Sequence (#)____ Searcher: ___

Dialog

09/335,581

<C Hines

Page 1

=> fil hcaplu

FILE 'HCAPLUS' ENTERED AT 11:26:24 ON 03 JAN 2002

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications.

FILE COVERS 1907 - 3 Jan 2002 VOL 136 ISS 1 FILE LAST UPDATED: 2 Jan 2002 (20020102/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

This file supports REG1stRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

HCAplus now provides online access to patents and literature covered in CA from 1907 to the present. Bibliographic information and abstracts were added in 2001 for over 3.8 million records from 1907-1966.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d stat que

L3

L4

L1 14 SEA FILE=HCAPLUS ("BANNAN J D"/AU OR "BANNAN JASON"/AU OR "BANNAN JASON D"/IN OR "BANNAN JASON DAVID"/AU)

L2 19 SEA FILE=HCAPLUS ("VISVANATHAN K"/AU OR "VISVANATHAN K S"/AU OR "VISVANATHAN KANNA V"/AU OR "VISVANATHAN KUMAR"/AU OR "VISVANATHAN KUMAR"/IN)

73 SEA FILE=HCAPLUS ("ZABRISKIE J"/AU OR "ZABRISKIE J B"/AU) OR ("ZABRISKIE JOHN"/AU OR "ZABRISKIE JOHN B"/AU OR "ZABRISKIE JOHN B"/IN)

2 SEA FILE=HCAPLUS L1 AND L2 AND L3

=> d ibib abs hitrn 14 1-2

L4 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2002 ACS ACCESSION NUMBER: 2001:76096 HCAPLUS

DOCUMENT NUMBER: 134:250923

TITLE: Inhibition of bacterial superantigens by peptides and

antibodies

AUTHOR(S): Visvanathan, Kumar; Charles, Alain;

09/335,581 Page 2

Bannan, Jason; Pugach, Pavel; Kashfi, Khosrow;

Zabriskie, John B.

CORPORATE SOURCE: Laboratory of Clinical Microbiology and Immunology,

Rockefeller University, New York, NY, 10021, USA

SOURCE: Infect. Immun. (2001), 69(2), 875-884

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal LANGUAGE: English

The pyrogenic exotoxins of group A streptococci and staphylococcal AB enterotoxins are a family of structurally related superantigens with similar biol. activity. Two distinct areas have been identified which have a highly conserved amino acid homol. in all of the toxin families. A no. of peptides were constructed from these regions, some of which were concatenated and polymd. to enhance their immunogenicity in animals. Antibodies prepd. against these polymd. peptides were used to serol. identify the majority of the superantigen toxins, block the biol. activities of the superantigens, and protect an exptl. animal model against shock. In addn. certain peptides were able per se to block up to 90% of the proliferative responses induced by the toxins. The peptide also proved protective in a septic shock model in mice. Binding expts. indicate that the peptide binds tightly to the major histocompatibility complex class II mol., thus preventing binding and hence activation of the superantigen. The selective and rapid binding of the peptide to the major histocompatibility complex class II mol. may lead to a novel therapeutic modality in treatment of superantigen-mediated diseases.

REFERENCE COUNT:

23

REFERENCE(S):

<C Hines

- (1) Arad, G; Nat Med 2000, V6, P414 HCAPLUS
- (2) Bannan, J; Adv Exp Med Biol 1997, V418, P903 HCAPLUS
- (4) Blank, C; Eur J Immunol 1997, V27(4), P825 HCAPLUS
- (5) Eriksson, A; Microb Pathog 1998, V25, P279 HCAPLUS
- (6) Fridkis-Hareli, M; J Immunol 1998, V160(9), P4386 HCAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2002 ACS ACCESSION NUMBER: 2000:241505 HCAPLUS

DOCUMENT NUMBER:

132:290233

TITLE:

Sequences of peptides derived from staphylococcal and streptococcal toxins, and applications thereof in

diagnosing and treating toxic shock syndrome and

septic shock

INVENTOR(S):

Bannan, Jason D.; Visvanathan, Kumar;

Zabriskie, John B.

PATENT ASSIGNEE(S):

Rockefeller University, USA

SOURCE: PCT Int. Appl., 115 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO.

KIND DATE

APPLICATION NO. DATE

L ...

```
WO 2000020598
                            20000413
                                          WO 1999-US22180 19990924
                      A1
        W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU,
            CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,
            IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD,
            MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK,
            SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY,
            KG, KZ, MD, RU, TJ, TM
        RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
            DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
            CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                         AU 1999-60597
                           20000426
    AU 9960597
                      Α1
                            20010829
                                         EP 1999-970123
                                                            19990924
     EP 1127132
                      Α1
        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, SI, LT, LV, FI, RO
PRIORITY APPLN. INFO.:
                                       US 1998-168303
                                                        A 19981007
                                                        A 19990618
                                       US 1999-335581
                                       WO 1999-US22180 W 19990924
```

OTHER SOURCE(S): MARPAT 132:290233

AB This invention relates to amino acid sequences of peptides useful for providing protection against, or reducing the severity of, toxic shock and septic shock resulting from bacterial infections. More particularly, the invention provides peptides derived from consensus sequences of the family of staphylococcal and streptococcal toxins, and may be polymeric and/or carrier-conjugates thereof. The invention also relates to serum antibodies induced by the peptides and/or carrier-conjugates and their use to prevent, treat, or protect against the toxic effects of most, if not all, of the staphylococcal and streptococcal toxins. Antibodies may be induced by administration of a pharmaceutical compn. and/or vaccine contg. a peptide of the invention. The invention also relates to diagnostic assays and kits to detect the presence of staphylococcal and streptococcal toxins, or antibodies thereto.

REFERENCE COUNT:

REFERENCE(S):

- (1) Bannan, J; WO 9845325 A 1998 HCAPLUS
- (2) Bannan, J; INFECTIOUS DISEASE CLINICS OF NORTH AMERICA 1999, V13(2), P387 MEDLINE
- (3) National Jewish Center For Immunology And Respiratory Medicine; WO 9636366 A 1996 HCAPLUS
- (4) Schlievert, P; WO 9640930 A 1996 HCAPLUS
- (5) Terman, D; WO 9110680 A 1991 HCAPLUS

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                           Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                 ő
    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                 Score
    %
Query
Match Length DB
   Issued_Patents_AA:*
1: /cgn2_6/ptodata/
2: /cgn2_6/ptodata/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-335-581A-34
71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        212252 seqs, 22503292 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            January 2, 2002, 20:46:42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                             /cgn2_6/ptodata/2/1aa/5A_COMB.pep:*
/cgn2_6/ptodata/2/1aa/5B_COMB.pep:*
/cgn2_6/ptodata/2/1aa/5A_COMB.pep:*
/cgn2_6/ptodata/2/1aa/6B_COMB.pep:*
/cgn2_6/ptodata/2/1aa/FCTUS_COMB.pep:*
/cgn2_6/ptodata/2/1aa/PCTUS_COMB.pep:*
 US-08-896-933-13

US-08-838-413A-3

US-08-838-413A-5

US-08-838-413A-7

US-08-838-413A-7

US-08-838-413A-8

US-08-896-933-28

US-08-896-933-27

US-08-838-413A-13

US-08-896-933-1

US-08-896-933-1

US-08-896-933-2

US-08-486-099-112

US-08-486-099-112

US-08-486-099-113

US-08-486-23B-113

US-08-484-223B-113

US-08-484-223B-113

US-08-484-223B-113

US-08-484-223B-113
                                                                                                                                                                                                                                                                                                                H
                                                                                                                                                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.5
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Search time 40.75 Seconds (without alignments) 6.627 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                Description
 sequence
13, Appl

13, Appl

14, Appl

5, Appl

7, Appl

8, Appl

8, Appl

27, Appl

27, Appl

9, Appl

13, Appl

14, Appl

24, Appl

24, Appl

24, Appl

24, Appl

24, Appl

27, Appl

28, Appl

29, Appl

112, Appl

112, Appl

112, Appl

112, Appl

112, Appl

113, Appl

113, Appl

113, Appl

113, Appl

113, Appl

113, Appl
```

u de la companya de l	Oy Db	RES US- S G		
TESULT 2 US-08-838-413A-3 Sequence 3, Application Patent No. 6075119 GENERAL INFORMATION: APPLICANT: TITLE OF INVENTION: TITLE OF INVENTION: INUMBER OF SEQUENCES: CORRESPONDENCE ADDRESS CORRESPONDENCE ADDRESS ADDRESSEE: MORGAN STREET: 345 PARK A CITY: NEW YORK STATE: NEW YORK COUNTRY: USA	Ouery Match Best Local Matches 1 / 1 CMY / 1 CMY	ULT 1 equence atent No atent No appricant fifte Of fifte Of fifte Of fifte Of fifte Of CURRENT COTHER O ORGANIS FEATURE OTHER I OTHER I OTHER I		20 20 20 20 20 20 20 20 20 20 20 20 20 2
2 838-413A-3 ence 3, Appl nt No. 60751 eral INFORMI PPLICANT: PPLICANT: PPLICANT: PPLICANT: PPLICANT: PPLICANT: PPLICANT: PPLICANT: PPLICANT: STREED: 34 STREET: 34 STREET: 48 STREET: MEW STRIE: NEW STRIE: NEW	Y - Y - 5	933-13 13, Appl 40. 622135 40. 622135 INFORMATI INT: Terma PERIFICE FERENCE: FERENCE: FAPPLICAT FILING D FILING		######################################
413A-3 3, Application 0, 6075119 0, 6075119 0F INVENTION: CANT: CA	tch al similarity 12; Conser (CMYGGVTLHEGN	13, Application 6221351 o. 6221351 INFORMATION: NT: Terman, Dar F INVENTION: Tremen, Ose F INVENTION: Tremen, Ose F INVENTION: Tremen, Ose F INVENTION: Tremen, Ose F ILLING DATE: APPLICATION N FILING DATE: APPLICATION FILING DATE: APPLICATION: CINFORMATION: CINFORMATION: CINFORMATION: a 933-13		887.3 87.3 87.3 87.3 87.3 87.3 87.3 87.3
Cation US/08 9 ION: PEPTI TION: PEDUC ENCES: 31 ADDRESS: MORGAN & FIN PARK AVENUE DRK YORK A	larity 100. Conservative Chegn 12 	1 1 6-933-13 10ce 13, Application US/08896933 No. 6221351 LINFORMATION: CANT: Terman, David S. OF INVENTION: TUMOR KILLING E OF INVENTION: SUPERANTIGENS, REFERENCE: 09629/005002 NT APPLICATION NUMBER: US/08/8 NT FILING DATE: 1997-07-18 ER APPLICATION NUMBER: 08/252, ER AFFILING DATE: 1994-06-02 R OF SEQ ID NOS: 34 ARE: FastSEQ for Windows Versi NO 13 TH: 14 INFORMATION: Consensus seque R INFORMATION: aureus and stre 6-933-13		257 257 257 257 257 257 257 257 220 12 12 13 231 231 235 255 255 255 255
US/088384 PEPTIDES REDUCING 31 SS: & FINNEGA AVENUE	0.0* 0.0*	S. KILL ANTIGO 002 002 107 107 108 108 108 108 108 108 108 108 108 108		
US/08838413A PEPTIDES USE REDUCING SYM 31 S: & FINNEGAN VENUE	۰, "	DB8969 DS/08/11GENS FIGENS F-18 08/25 F-02 Ver Vs Ver Vs Ver Ns Ver Ns Seq		
.3A JSEFI	H 0	96933 LING EFFECTIONS, AND 1 ENS, AND 1 2 Version 3 version 3 sequences serverses	ALI	
113A USEFUL FO SYMPTOMS	e 71; . No. smatc	0	ALIGNMENTS	US-08-475-6 US-08-475-6 US-08-485-5 US-08-471-9 US-08-471-9 US-08-896-9
FOR S OF	hes	2 3 £ 0	SEN	5-668A-112 5-568A-113 5-551A-113 -515A-113 -913A-113 -913A-113 -264A-113 -913B-15 -933-20 -413A-10 -933-3 -933-20
TOXIC	7e	< 		-126
	0, 6,			
SHOCK	Length 14 Indels	roxi Ound 121	•	
NAS	h 14 els	S S S S S S S S S S S S S S S S S S S		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
SYNDROME		EROTOXINS, OMPOUNDS (0, 221, 351 (4, 126, 945 (5, 126, 1945 Grom stapholycoccus genes polypeptides		Sequence
Ħ	0;	des O()		
	Gaps			1112 1113 1113 1113 1113 1113 1113 1113
		<u>5</u>		App App App App App App App App
	0;	<u>w</u>		

COMPUTER READABLE FORM: MEDIUM TYPE: FLOPPY

FLOPPY DISK

```
US-08-838-413A-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TOPOLOGY: UNKNOWN ; MOLECULE TYPE: PEPTIDE US-08-838-413A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 11, Application US/08838413A Patent No. 6075119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/
FILING DATE: 07-APR-1997
CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)758-4800
TELEPAX: (212)751-6849
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY DISK
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WORDPERFECT 5.1
CURRENT APPLICATION DATA:
                                                                                                       APPLICATION NUMBER: US/08/838,413A FILING DATE: 07-APR-1997 CLASSIFICATION: 536 PRIOR APPLICATION DATA:
                 ATTORNEY/AGENT INFORMATION:
NAME: MORRY, MARY J.
                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: PE
TITLE OF INVENTION: RE
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: MORRY, MARY J.
RECISTRATION NUMBER: 34,398
REFERENCE/DOCKET NUMBER: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WORDERFECT 5.1
CURRENT APPLICATION DATA:
                                                   FILING DATE: 536
                                                                                                                                                                                                                                                                                                                              ADDRESSEE: MORGAN & FINNEGAN
STREET: 345 PARK AVENUE
CITY: NEW YORK
STATE: NEW YORK
REGISTRATION NUMBER: 34,398
                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                               COUNTRY: UZIP: 10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity 91.7
nes 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: AMINO ACID
STRANDEDNESS: UNKNOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENGTH:
                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                  PEPTIDES USEFUL FOR REDUCING SYMPTOMS OF TOXIC SHOCK SYNDROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/08/838,413A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 64; DB 3;
Pred. No. 6e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2016-4010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

Matches Query Match

Local Similarity

90.1%; 91.7%;

Score 64; DB 3; Pred. No. 7.1e-05;

Length 14;

Conservative

0;

Mismatches

Indels

0,

Gaps

0

```
US-08-838-413A-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-838-413A-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-838-413A-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 5, Application US/08838413A Patent No. 6075119
                                                                                                                                                        CLASSIFICATION: 536
ATTORNEY, AGENT INFORMATION:
NAME: MORRY, MARY J.
REGISTRATION NUMBER: 34,398
REFERENCE/DOCKET NUMBER: 2016
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 90.
Best Local Similarity 83.
Matches 10; Conservative
                                                                                                            TELEFAX: (212)751-684
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 20
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)758-4800
TELEFAX: (212)751-6849
INFORMATION FOR SEQ ID NO: 11:
                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/08/838,413A
FILING DATE: 07-APR-1997
CLASSIFICATION: 536
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-
SOFTWARE: WORDERFECT 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: PEPTIDES 0:
TITLE OF INVENTION: REDUCING SI
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORGAN & FINNEGAN
               MOLECULE TYPE:
                                                                                            SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                             STRANDEDNESS:
TOPOLOGY: UN
                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                          APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: NEW YORK
STATE: NEW YORK
                                                                         ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS: UNKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 CMYGGITKHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENGTH:
                                                            AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       345 PARK AVENUE
                                                                                                                          : (212)758-4800
(212)751-6849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                              UNKNOWN
             PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                        FLOPPY DISK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PEPTIDE
                                            UNKNOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            UNKNOWN
                                                                                                                                                                                                                                                                                                                                                                                      PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PEPTIDES USEFUL FOR REDUCING SYMPTOMS OF TOXIC SHOCK SYMPTOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90.1%;
83.3%;
                                                                                                            <u>ن</u>
                                                                                                                                                                           2016-4010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2016-4010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 64;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 3;
6e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

밁

CMYGGVTLHEGN 12

```
GENERAL INFORMATION:
GENERAL INFORMATION: TOWOR KILLING EFFECTS OF ENTEROTOXINS,
TITLE OF INVENTION: TUMOR KILLING EFFECTS OF ENTEROTOXINS,
TITLE OF INVENTION: SUPERANTIGENS, AND RELATED COMPOUNDS
FILE REFERENCE: 09629/005002
CURRENT APPLICATION NUMBER: US/08/896,933
CURRENT APPLICATION NUMBER: US/08/252,978
EARLIER APPLICATION NUMBER: 08/252,978
EARLIER APPLICATION NUMBER: 08/252,978
EARLIER FILING DATE: 1994-06-02
NUMBER OF SEO ID NOS: 34
SOFTWARE: FASTSEO for Windows Version 3.0
SEO ID NO 5
LENGTH: 14
TYPE: PAT
ORGANISM: Staphylococcus aureas
US-08-896-933-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-896-933-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 7, Application US/08838413A Patent No. 6075119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 5, Application US/08896933 Patent No. 6221351
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WORDPERFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/838.413A
FILING DATE: 07-APR-1997
CLASSIFICATION: 536
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: MORRY, MARY J.
REGISTRATION NUMBER: 34,398
REFERENCE/DOCKET NUMBER: 2016-4010
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)758-4800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -08-838-413A-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM: MEDIUM TYPE: FLOPPY DISK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: PE
TITLE OF INVENTION: RE
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                 TAMET: 345 PARK AVENUE CITY: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CMYGGITKHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PEPTIDES USEFUL FOR REDUCING SYMPTOMS OF TOXIC SHOCK SYNDROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 64; Pred. No. 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               )В ч,
/.1e-05;
1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
; TYPE: AMINO ACID
; STRANDEDNESS: UNKN
; TOPOLOGY: UNKNOWN
; MOLECULE TYPE: PEPTI
US-08-838-413A-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-838-413A-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-838-413A-7
                                                                                                                                                                           CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION UMBER:
FILING DATE:
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: MORRY, MARY J.
REGISTRATION UMBER: 34 398
REFERENCE/DOCKET NUMBER: 2016:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)758-4800
TELEPAX: (212)751-6849
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 8, Application US/08838413A Patent No.: 6075119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
   Matches
                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (212)751-684
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: PEPTIDES US
TITLE OF INVENTION: REDUCING SI
NUMBER OF SEQUENCE: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORGAN & FINNEGAN
STREET: 345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: WORDPERFECT CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE: FLOPPY DISK
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      y Match 90.1%;
Local Similarity 91.7%;
hes 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/08/838,413A FILING DATE: 07-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 345 PARE
CITY: NEW YORK
STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: AMINO ACID STRANDEDNESS: UNF
                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 CMYGGVTLHEGN 12
 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (212)751-6849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WORDPERFECT 5.1
                                                                                                                  UNKNOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             UNKNOWN
                                                                                                PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             UNKNOWN
                                                                                                                                 UNKNOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PC-DOS/MS-DOS
                 90.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PEPTIDES USEFUL FOR REDUCING SYMPTOMS OF TOXIC SHOCK SYNDROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7 :
Score 64; DB 3; Pred. No. 0.0002; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                 2016-4010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 64; DB 3;
Pred. No. 0.00019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                Length 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 36;
 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1; Indels
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

1 CMYGGVTLHEGN 12

₽

CMYGGVTEHEGN

```
APPLICANT: TERMAN, DAVID S.

APPLICANT: TERMAN, DAVID S.

TITLE OF INVENTION: TUMOR KILLING EFFECTS OF ENTEROTOXINS, TITLE OF INVENTION: SUPERANTIGENS, AND RELATED COMPOUNDS.

FILE REFERENCE: 09629/005002

CURRENT APPLICATION NUMBER: US/08/896,933

CURRENT FILING DATE: 1997-07-18

EARLLER APPLICATION NUMBER: 08/252,978

EARLLER APPLICATION NUMBER: 08/252,978

EARLLER FILING DATE: 1994-06-02

NUMBER OF SEQ ID NOS: 34

SOFTWARE: FASTSEQ for Windows Version 3.0

SEQ ID NO 27

LENGTH: 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: TUMOR KILLING EFFECTS OF ENTEROTOXINS,
FILE REFERENCE: 09629/005002
CURRENT APPLICATION NUMBER: US/08/896,933
CURRENT FILING DATE: 1997-07-18
EARLIER REPLICATION NUMBER: 08/252,978
EEARLIER FILING DATE: 1994-06-02
NUMBER OF SEQ ID NOS: 34
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 28
LENGTH: 238
LENGTH: 238
                                                                                                                  RESULT 10
US-08-838-413A-9
                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                              ; LENGTH: 239
; TYPE: PRT
; ORGANISM: Staphylococcus aureas
US-08-896-933-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-896-933-27
Sequence 27, Application US/08896933
Fatent No. 6221351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٠<u>۷</u>
                                   Sequence 9, Application US/08838413A Patent No. 6075119
GENERAL INFORMATION:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; TYPE: PRT ; ORGANISM: Staphylococcus aureas US-08-896-933-28
                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 8
US-08-896-933-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Terman, David S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 28, Appli
Patent No. 6221351
     TITLE OF INVENTION:
                           APPLICANT:
                                                                                                                                                                                           110 CMYGGITKHEGN 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109 CMYGGITKHEGN 120
                                                                                                                                                                                                                         1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Application US/08896933
                                                                                                                                                                                                                                                                        .Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
PEPTIDES USEFUL FOR
                                                                                                                                                                                                                                                                                    90.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90.1%;
83.3%;
                                                                                                                                                                                                                                                                                    Score 64;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 64; D
Pred. No. 0.
                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                    0.0014;
                                                                                                                                                                                                                                                                                                  DB 4; Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 4; Length 238; 0.0014;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
RESULT 11
US-08-838-413A-13
                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-838-413A-9
                                                                                                                                                                                                                                                                                                                         Patent No. 6075119
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 2016
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)758-4800
TELEPAX: (212)751-6849
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best
                                                                                                                                                                                                                                                                                                                                           Sequence 13, Application US/08838413A Patent No. 6075119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WORDPERFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/838,413A
FILING DATE: 07-APR-1997
                                                                                    ZIP: 10154
COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY DISK
                                                                                                                                                                                                                                                          APPLICANT:
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: MORRY, MARY J.
REGISTRATION NUMBER: 34,398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/08/838,413A
FILING DATE: 07-APR-1997
CLASSIFICATION: 536
PRIOR APPLICATION NUMBER:
FILING DATE:
FILING DATE:
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY DISK
                                                                                COMPUTER:
                                                                                                                                                                             ADDRESSEE: MUKGAM _
CTRRET: 345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: NUMBER OF SEQUENCES:
                                                                                                                                                COUNTRY:
                                                                                                                                                                   STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  / Match 87.3%;
Local Similarity 83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: AMINO ACID
STRANDEDNESS: UNK
TOPOLOGY: UNKNOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CMYGGVTLHDNN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: NEW YORK STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10154
                                                                                                                                                               NEW YORK
                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                345 PARK AVENUE
                                                                                                                                                                                                           MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WORDPERFECT 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IBM PC COMPATIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 UNKNOWN
                                                                                                                                                                                                                                             PEPTIDES USEFUL FOR REDUCING SYMPTOMS OF TOXIC SHOCK SYNDROME 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REDUCING SYMPTOMS OF TOXIC SHOCK SYNDROME 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 62; DB 3;
Pred. No. 0.00013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2016-4010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

0;

CLASSIFICATION: 536 PRIOR APPLICATION DATA:

APPLICATION NUMBER: FILING DATE:

```
; ORGANISM: Staphylococcus aureus US-08-896-933-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                 US-08-896-933-9
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-896-933-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:

NAME: MORRY MARY J.

REGISTRATION NUMBER: 34,398

REFERENCE/DOCKET NUMBER: 2016-4010

TELECOMMUNICATION INFORMATION:

TELEPHONE: (212)758-4800

TELEPHONE: (212)751-6849

INFORMATION FOR SEQ ID NO: 13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-838-413A-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 34
SOFTWARE: FASESEQ for Windows Version 3.0
SEQ ID NO 1
LENGTH: 14
TYPE: PRT
Sequence 9, Application US/08896933
Patent No. 6221351
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Terman, David S.
TITLE OF INVENTION: TUMOR KILLING EFFECTS OF ENTEROTOXINS,
TITLE OF INVENTION: SUPERANTIGENS, AND RELATED COMPOUNDS
FILE REFERENCE: 09629/005002
CURRENT APPLICATION NUMBER: US/08/896,933
CURRENT FILING DATE: 1997-07-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: Terman, David S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application US/08896933 Patent No. 6221351
                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: TUMOR KILLING EFFECTS OF ENTEROTOXINS, TITLE OF INVENTION: SUPERANTIGENS, AND RELATED COMPOUNDS FILE REFERENCE: 09629/005002
CURRENT APPLICATION NUMBER: US/08/896,933
CURRENT FILING DATE: 1997-07-18
EARLIER APPLICATION NUMBER: 08/252,978
EARLIER FILING DATE: 1994-06-02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS: UNKNOWN
TOPOLOGY: UNKNOWN
MOLECULE TYPE: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 CMYGGVTLHDNN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                1 CMYGGVTLHDNN 12
                                                                                                                                                                                                                                                                                                   1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              UNKNOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87.3%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                             87.3%;
                                                                                                                                                                                                                                                                                                                                        Score 62; DB 4;
Pred. No. 0.00015;
1; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 62; DB 3;
Pred. No. 0.00013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 12
                                                                                                                                                                                                                                                                                                                                                                               Length 14;
                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
STRANDEDNESS:
TOPOLOGY: lin
MOLECULE TYPE:
US-08-220-378-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-220-378-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Staphylococcus aureas
US-08-896-933-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EARLIER APPLICATION NUMBER: 08/252,978
EARLIER FILING DATE: 1994-06-02
NUMBER OF SEQ ID NOS: 34
SOFTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 5, Application Patent No. 5545716
                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                            Query Match
                                                                                                                                                                                                                     TELEFAX: 904-372-5800
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Jonnson, ...
APPLICANT: Pontzer, Carol H.
APPLICANT: Griggs, Nathan D.
Applicant: Griggs, Superant
                                                                                                                                                                                                                                                                                                                                                                             FILING LAND. 530
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: US 07/941,497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 14
                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: UF TELECOMMUNICATION INFORMATION: TELEPHONE: 904-375-8100
                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US 07/9
FILING DATE: 08-SEP-1992
ATTORNEY/AGENT INFORMATION:
NAME: Saliwanchik, David R.
REGISTRATION NUMBER: 31,794
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/220,378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0
                                                               Local Similarity
                                                                                                                                                                                              TYPE:
                                                                                                                                                                                                                                                                       TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 CMYGGVTLHDNN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 CMYGGVTLHEGN 12
                                                  10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gainesville
                                                                                                                                                                                         amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Application US/08220378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ΕĽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: Saliwanchik & Saliwanchik
2421 N.W. 41st Street, Suite A-1
                                                                                                                                                                                                             23 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                  Conservative
                                                                                                                                                                linear
                                                                                                                                            peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Floppy disk
                                                                                                                                                                           single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     87.3%;
83.3%;
                                                               87.3%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Superantigen Agonist and Antagonist
                                                                                                                                                                                                                                                                                                                      31,794
                                                                                                                                                                                                                                                                                                          UF126.C1
                                                               Score 62; DB 1;
Pred. No. 0.00026;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 62; DB 4;
Pred. No. 0.00015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                  Mismatches
                                                  1; Indels
                                                                            Length 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                  0
```

밁

5 CMYGGVTLHDNN 16

```
COMPUTER READABLE FORM:

MEDIUM TYPE: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/696,012
FILING DATE: 12-AUG-1996
CLASSIFICATION NUMBER: 08/220,378
FILING DATE: 29-MAR-1994
APPLICATION NUMBER: US 07/941,497
FILING DATE: 29-MAR-1992
CLASSIFICATION NUMBER: US 07/941,497
FILING DATE: 39-MAR-1992
CLASSIFICATION NUMBER: US 07/941,497
FILING DATE: 08-SEP-1992
CLASSIFICATION NUMBER: US 07/941,497
FILING DATE: 09-MAR-1992
CLASSIFICATION NUMBER: US 07/941,497
FILING DATE: 09-MAR-1994
APPLICATION NUMBER: US 07/941,497
FILING DATE: 09-MAR-1994
FILING DATE: 09-MAR-1994
APPLICATION NUMBER: US 07/941,497
FILING DATE: 09-MAR-1994
APPLICATION NUMBER: US 07/941,49
Search completed: January 2, 2002, 20:46:42 Job time: 11488 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MESULT 15
US-08-696-012-5
; Sequence 5, Application US/08696012
; Patent No. 5859207
                                                                                                                                                                                                                                                                                                                                       Query Match 87.3%;
Best Local Similarity 83.3%;
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Johnson, Howard M.
APPLICANT: Pontzer, Carol H.
APPLICANT: Griggs, Nathan D.
TITLE OF INVENTION: Superantigen Agonist and Antagonist
TITLE OF INVENTION: Peptides
NUMBER OF SEQUENCES: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: Saliwanch
                                                                                                                                                                               5 CMYGGVTLHDNN 16
                                                                                                                                                                                                                               1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: USA
ZIP: 32606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 2421 N.W. CITY: Gainesville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EE: Saliwanchik & Saliwanchik
2421 N.W. 41st Street, Suite A-1
                                                                                                                                                                                                                                                                                                                                                                       Score 62; DB 2;
Pred. No. 0.00026;

    Mismatches

                                                                                                                                                                                                                                                                                                                                   1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                       Length 23;
                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                           0;
```

36

Although the foregoing invention has been described in detail for purposes of clarity of understanding, certain modifications may be practiced within the scope of the appended claims. While the above findings apply to an experimental animal model, it should be recognized that the tumor used 5 herein is an excellent model of human cancer. Therapeutic success in the canine model with PACC system (described in a series of patent applications, the latest of which is identified as Ser. No. 331,095), the forerunner of the present invention, was transferred to humans in which objective 10 tumor regressions were obtained in four of the first five consecutive patients treated. Thus, the data given herein for rabbits with carcinoma is expected to be predictive of success when the compositions are applied to humans with spontaneous tumors as well.

In the method of treating cancer in a patient utilizing a single step of administering Staphylococcal enterotoxins or enterotoxin fragments, a tumoricidally effective amount of the enterotoxin or enterotoxin fragment is between 0.5 μ g (enterotoxin) per kg (body weight) and 150 μ g (enterotoxin) 20 per kg (body weight). This tumoricidally effective amount applies to the enterotoxins which are chemically derivatized.

We claim:

- 1. A method of treating a subject having a tumor comprising administering to the subject a tumoricidally effective 25 amount of a toxin selected from the group consisting of a staphylococcal enterotoxin and a streptococcal pyrogenic exotoxin.
- 2. The method of claim 1, wherein the toxin is a staphylococcal enterotoxin.
- 3. The method of claim 2 wherein the staphylococcal enterotoxin is selected from the group consisting of enterotoxin A, B, C, D, E, and F.
- 4. The method of claim 2 wherein the staphylococcal enterotoxin is a biologically active fragment of an enterotoxin.
- 5. The method of claim 2 wherein the staphylococcal enterotoxin has been chemically derivatized to minimize toxicity while retaining tumoricidal activity.

- 6. The method of claim 1 wherein the toxin is administered by intravenous inoculation.
- 7. The method of claim 1 wherein the tumor is a carcinoma.
- 8. A method of treating a patient having a tumor comprising administering to the patient a tumoricidally effective amount of a toxin selected from the group consisting of a staphylococcal enterotoxin and a streptococcal pyrogenic exotoxin.
- 9. The method of claim 8 wherein the toxin is a staphylococcal enterotoxin.
- 10. The method of claim 9 wherein the staphylococcal enterotoxin is selected from the group consisting of enterotoxin A, B, C, D, E, and F.
 - 11. The method of claim 10 wherein the staphylococcal enterotoxin is enterotoxin B.
 - 12. The method of claim 8 wherein the tumor is a carcinoma.
 - 13. The method of claim 9 wherein the staphylococcal enterotoxin is a biologically active fragment of an enterotoxin.
 - 14. The method of claim 9 wherein the staphylococcal enterotoxin has been chemically derivatized to minimize toxicity while retaining tumoricidal activity.
 - 15. The method of claim 9 wherein the chemical derivatization is carboxymethylation.
 - 16. The method of claim 15 wherein the carboxymethylated toxin comprises carboxymethylated enterotoxin B.
 - 17. The method of claim 11 wherein the enterotoxin B has been purified to remove alpha hemolysin.
 - 18. The method of claim 11 wherein the enterotoxin B contains no more than 0.1 microgram endotoxin per milligram enterotoxin B.
 - 19. The method of claim 8 wherein the toxin is administered by intravenous inoculation.

* * * * *

60

-continued

225 235 240 230 Arg Ala Lys Leu Asp Lys <210> SEQ ID NO 34 <211> LENGTH: 27 <212> TYPE: PRT <213> ORGANISM: Staphylococcal <400> SEQUENCE: 34 Ser Glu Lys Ser Glu Glu Ile Asn Glu Lys Asp Leu Arg Lys Lys Ser Glu Leu Gln Gly Thr Ala Leu Gly Asn Leu Lys
20 25

What is claimed is:

- 1. A method of treating cancer in a tumor-bearing host, comprising contacting the immune system of said host with tumor cells that are transfected with a nucleic acid encoding a superantigen which is expressed in said transfected cells, thereby inducing a tumoricidal immune response and treating said cancer.
- 2. A method of treating cancer in a tumor-bearing host, comprising contacting the immune system of said host with accessory cells, immunocytes or fibroblasts that are transfected with a nucleic acid encoding a superantigen which is 30 expressed in said transfected cells, thereby inducing a tumoricidal immune response and treating said cancer.
- 3. The method of claim 1 or 2 wherein the superantigen is selected from the group consisting of a Staphylococcal enterotoxin, a Streptococcal pyrogenic exotoxin, toxic shock 35 syndrome toxin, a mycoplasma antigen, a mycobacteria antigen, a minor lymphocyte stimulating antigen, a heat shock protein, a stress peptide, and a derivative thereof.
- 4. The method of claim 1 or 2 wherein the tumor cells, accessory cells, immunocytes or fibroblasts are transfected 40 is a human. in vivo.
- 5. The method of claim 1 or 2 wherein the tumor cells, accessory cells, immunocytes or fibroblasts are transfected in vitro.
- 6. The method of claim 5 wherein the transfected cells are 45 tumor cells.
- 7. The method of claim 1 or 2 wherein the contacting
- (i) incubating the transfected cells ex vivo with an immunocyte population to tumoricidally activate the 50 cells are transfected in vitro. population, and
- (ii) administering the activated population to the tumorbearing host.
- 8. The method of claim 7 wherein the activated immuadministration.
- 9. The method of claim 8 wherein the in vitro culture includes interleukin 2
- 10. The method of claim 7, wherein the immunocyte population being activated comprises T cells.
- 11. The method of claim 1 or 2, wherein the superantigen is expressed on the surface of the transfected cells.
- 12. The method of claim 1 or 2, wherein the transfected cells express MHC class II molecules.
- 13. The method of claim 1 or 2, wherein the contacting 65 comprises administering the transfected cells to the tumorbearing host.

- 14. The method of claim 1 or 2, wherein the host is a human.
- 15. A method of killing tumor cells in a mammal, comprising contacting tumor cells that are transfected with nucleic acid encoding a superantigen or biologically active polypeptide of a superantigen with the immune system of said mammal,
 - wherein expression of said superantigen or polypeptide by the transfected cells produces a tumoricidal immune response resulting in the killing of said tumor cells.
- 16. A method of killing tumor cells in a mammal, comprising contacting accessory cells, immunocytes, or fibroblasts that are transfected with nucleic acid encoding a superantigen or biologically active polypeptide of a superantigen with the immune system of said mammal,
 - wherein expression of said superantigen or polypeptide by the transfected cells produces a tumoricidal immune response resulting in the killing of said tumor cells.
- 17. The method of claim 15 or 16, wherein the mammal
- 18. The method of claim 15 or 16, wherein the superantigen is selected from the group consisting of a Staphylococcal enterotoxin, a Streptococcal pyrogenic exotoxin, toxic shock syndrome toxin, a mycoplasma antigen, a mycobacteria antigen, a minor lymphocyte stimulating antigen, a heat shock protein, a stress peptide, and a derivative thereof.
- 19. The method of claim 15 or 16, wherein the transfected cells are transfected in vivo.
- 20. The method of claim 15 or 16, wherein the transfected
- 21. The method of claim 20, wherein the transfected cells are tumor cells, and the contacting comprises administering the transfected tumor cells to the mammal.
- 22. The method of claim 15 or 16, wherein the contacting nocytes are expanded by further in vitro culture prior to their 55 comprises administering the transfected cells to the mammal.
 - 23. The method of claim 15 or 16, wherein the contacting
 - (i) incubating the transfected cells ex vivo with an immunocyte population to tumoricidally activate the population, and
 - (ii) administering the activated population to the mammal.
 - 24. The method of claim 23, wherein the immunocyte population being activated comprises T cells.
 - 25. The method of claim 23, wherein the activated immunocytes are expanded by in vitro culture prior to their administration.

62

- 26. The method of claim 25, wherein the in vitro culture includes interleukin 2.
- 27. The method of claim 15 or 16, wherein the superantigen is expressed on the surface of the transfected cells.
- 28. The method of claim 15 or 16, wherein the transfected 5 cells expresses MHC class II molecules.
- 29. A method for increasing antitumor immunity against a tumor in a mammal, comprising contacting tumor cells that are transfected with nucleic acid encoding a superantigen or biologically active polypeptide of a superantigen with the 10 immune system of said mammal,

wherein expression of the superantigen or polypeptide by the transfected cells induces T cell proliferation and increases said antitumor immunity.

30. A method for increasing antitumor immunity against 15 a tumor in a mammal, comprising contacting accessory cells, immunocytes or fibroblasts that are transfected with nucleic acid encoding a superantigen or biologically active polypeptide of a superantigen with the immune system of said mammal, 20

wherein expression of the superantigen or polypeptide by the transfected cells induces T cell proliferation and increases said antitumor immunity.

- 31. The method of claim 29 or 30, wherein the mammal is a human.
- 32. The method of claim 29 or 30, wherein the superantigen is selected from the group consisting of a Staphylococcal enterotoxin, a Streptococcal pyrogenic exotoxin, toxic shock syndrome toxin, a mycoplasma antigen, a mycobacteria antigen, a minor lymphocyte stimulating antigen, a heat shock protein, a stress peptide, and a derivative thereof.
- 33. The method of claim 29 or 30, wherein the tumor cells, accessory cells, immunocytes or fibroblasts are transfected in vivo.
- 34. The method of claim 29 or 30, wherein the tumor cells, accessory cells, immunocytes or fibroblasts are transfected in vitro.
- 35. The method of claim 34, wherein the transfected cells are tumor cells, and the contacting comprises administering the transfected tumor cells to the mammal.

- 36. The method of claim 29 or 30, wherein the contacting comprises administering the transfected cells to the mammal.
- 37. The method of claim 29 or 30, wherein the contacting comprises:
 - (i) incubating the transfected cells ex vivo with an immunocyte population to tumoricidally activate the population, and
 - (ii) administering the activated population to the mammal.
- 38. The method of claim 37, wherein the immunocyte population being activated comprises T cells.
- 39. The method of claim 37, wherein the activated immunocytes are expanded by in vitro culture prior to their administration.
- 40. The method of claim 39, wherein the in vitro culture includes interleukin 2.
- 41. The method of claim 29 or 30, wherein the superantigen is expressed on the surface of the transfected cells.
- 42. The method of claim 29 or 30, wherein the transfected cells express MHC class II molecules.
- 43. A method for treating cancer in a tumor-bearing host, comprising administering a nucleic acid encoding a superantigen to said tumor in vivo to transfect tumor cells, wherein expression of said superantigen induces a tumoricidal immune response, thereby treating said cancer.
- 44. A method of killing tumor cells in a mammal, comprising administering a nucleic acid encoding a superantigen or biologically active polypeptide of a superantigen to said tumor in vivo to transfect tumor cells, wherein expression of the superantigen or polypeptide produces a tumoricidal immune response resulting in the killing of said tumor cells.
- 45. A method for increasing antitumor immunity against a tumor in a tumor-bearing mammal, comprising administering a nucleic acid encoding a superantigen or biologically active polypeptide of a superantigen to said tumor in vivo to transfect tumor cells, wherein expression of the superantigen or polypeptide induces T cell proliferation and increases said antitumor immunity.
- 46. The method of any of claims 43-45 wherein said mammal or host is a human.

* * * * *

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Searched
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                                                                                                                                                                        Pred. No.
score grea
and is der
                                                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                   No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
100.0
100.0
100.0
100.0
100.0
100.0
                                                                                                                                                                                                                                                  Match
                                                                                                                                                                                                                                                                        Query
                                                                                                                                                                                                                                                                                                                                                                                                                          /SIDS2/gcgdata/geneseq/geneseqp/AA1980.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1981.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1981.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1983.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1985.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1985.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1985.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1985.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1987.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1987.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1989.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1990.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1991.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1993.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1993.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1995.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1995.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1995.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-335-581A-3
72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         522463 seqs, 74073290 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         January 2, 2002, 17:59:24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A_Geneseq_1101:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                     В
    19
21
21
21
21
21
21
21
                                                                                                                                                                                                                                                  Б
                     AAW72422
AAY797838
AAY72424
AAW72424
AAW72424
AAY72178
AAW772178
AAW772426
AAW772180
AAW72427
                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.5
Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Search time 77.31 Seconds (without alignments)
11.498 Million cell updates/sec
                   Staphylococcal/str
Peptide #6344, der
Peptide #5 for red
Staphylococcal/str
Peptide #6347, der
Peptide #6 for red
                                                                                                                                         Peptide #1 for red
Staphylococcal/str
Peptide #6343, der
Peptide #3 for red
                                                                                                                                                                                                                                                Description
```

Peptide from regi Streptococcal pyr	AAY72188 AAR13209	22 12	12 221	87.5 87.5	636	44
Group	AAY97850	21	12	٦.	5 63	43
Amino	AAY54464	21	266	ω.	67	42
Staphylococcal	AAY70108	21	266	ω.	67	41
Plant	AAY92319	21	266	ω ·	67	40
Mutant	AAY70105	21	265	ω.	67	39
Staphylococcal	AAY70104	21	265	ω	67	38
Staphylococcus	AAW06737	18	255	ω	67	37
Mutant	4	21	240	ω	67	36
Staphylococcus	AAB67342	22	239	ω	67	35
Staphylococcus	AAB67341	22	239	'n	67	34
Mutant	AAY70106	21	239	ω	67	ω ω
Staphylococca	ū	20	239	ω	67	32
Staphylococca	AAY06252	20	239	ω	67	31
Staphylococca	G	20	239	w	67	30
Staphylococca	Մ	20	239	ω.	67	29
Staphylococca	AAY06257	20	239	ω.	67	28
Staphylococca	25	20	239	w ·	67	27
Staphylococca	S	20	239	ω	67	26
Staphylococca	AAY06254	20	239	ü	67	25
Synthetic	AAW64647	19	239	u	67	24
Staphylococca	AAR45015	14	239	ω.	67	23
Staphylococcal	AAR45014 .	14	239	ω	67	22
Staphylococcal	AAR13207	12	239	ω	67	21
Staphylococcal	AAR13206	12	239	'n	67	20
Staphylococcus	AAB67343	22	238	ω	67	19
Staphylococcal	AAR45016	14	238	u	67	18
Staphylococcal	AAR13208	12	238	ω	67	17
Peptide	AAY72184	22	12	ω.	767	16
Peptide	AAY72183	22	12	ω.	³ 67	15
Staphy	AAY97846	21	12	93.1	£),	14
ţ	AAY97845	21	12	ω	67	w
Pept	AAY72181	22	38	100.0	72	12

ALIGNMENTS

AAW72422 standard; peptide; 12

Ą

Peptide #1 for reducing symptoms of toxic shock syndrome

22-DEC-1998 (first entry)

AAW72422;

```
Toxic shock syndrome; immunogenic response; bacterial infection; staphylococcal enterotoxin; streptococcal pyrogenic toxin; antibody; autoimmune disease.
                                                                                                                                                           Synthetic.
Staphylococcus sp.
Streptococcus sp.
New peptides that generate antibodies against staphylococcal and streptococcal toxins - used to diagnose, treat or prevent toxic
                            WPI; 1998-568335/48.
                                               Bannan JD,
                                                                                   07-APR-1997;
                                                                                                     01-APR-1998;
                                                                                                                       15-OCT-1998
                                                                                                                                          WO9845325-A1
                                                               (UYRQ ) UNIV ROCKEFELLER.
                                               Zabriskie JB;
                                                                                   97US-0838413
                                                                                                     98WO-US06663
```

Claim 4;

Page 53;

69pp; English

shock and autoimmune diseases

```
ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 100.
""" hes 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                x1, x8, x13 and x24 = L, I or V; x3, x25 and x26 = any amino acid (aa) or are absent; x27 = L or Y; all other x may be any aa. The peptides can be used to generate serum antibodies (Ab) that bind at least one staphylococcal enterotoxin (SE) or streptococcal endotoxin (SPE). Ab are used: (i) for diagnostic detection of SPEA or SEA, SEB and SED, in usual immunoassays; (ii) to inhibit blastogenesis of human mononuclear cells in presence of these toxins (i.e. to protect against or alleviate toxic shock or autoimmune disease associated with bacterial infections); and (iii) for passive immunisation against effects of the toxins. The peptides generate Ab that are cross-reactive with toxins from a variety of bacteria. The present sequence represents a specifically claimed example of a peptide of the present invention.
                             Claim 4;
                                                                  Peptides useful for syndrome and septic
                                                                                                                WPI; 2000-303782/26
                                                                                                                                                                                                   07-OCT-1998;
18-JUN-1999;
                                                                                                                                                                                                                                                                                                                             Synthetic.
Staphylococcus aureus
Streptococcus sp. 'Gro
                                                                                                                                                                      (UYRQ ) UNIV ROCKEFELLER.
                                                                                                                                                                                                                                             24-SEP-1999;
                                                                                                                                                                                                                                                                       13-APR-2000
                                                                                                                                                                                                                                                                                                    WO200020598-A1
                                                                                                                                                                                                                                                                                                                                                                                                 Pyrogenic exotoxin; enterotoxin; streptococcal infection; staphylococcal infection; septic shock; toxic shock; vacc
                                                                                                                                                                                                                                                                                                                                                                                                                                        Staphylococcal/streptococcal pyrogenic toxin-derived peptide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY97838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY97838 standard; peptide; 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention describes peptides having consensus sequences #1 or #2, optionally as part of a larger molecule of size at least 6-8 kD where consensus sequence #1 and #2 are: X25X26YG8X1TXXX34XN #1, KX6X7X8X9X10X11X12X13DX14X15X16RX17X18X27X19X20X21X22X23X24Y #2, where
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 cmyggvtehegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #2, optionally as r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
                                                                                                                                           'n
                          Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12
                                                                                                                                         Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                         88; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ā
                                                                                                                                                                                                  98US-0168303.
99US-0335581.
                                                                                                                                                                                                                                             99WO-US22180
                                                                                                                                                                                                                                                                                                                           'Group A'
                                                                  preventing and reducing the symptoms of toxic shock shock from staphylococcal and streptococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                           Zabriskie JB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 72;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3.5e-06;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                 toxic shock; vaccine,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                           6343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
```

The invention relates to novel peptides (AAY97838-Y97843) comprising

Mononuclear cell; blastogenesis; inhibitor; HIV; replication; staphylococcal enterotoxin; human immunodeficiency virus; T co

T cell;

```
AAY72176
ID AAY7
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                staphylococcal enterotoxin or streptococcal exotoxin and both the peptides and antibodies can be used in diagnostic assays to aid in the cities acids encoding a peptide of the invention can be used for the production of the peptides for diagnostic reagents, as vaccines and for therapies for pyrogenic exotoxin related diseases. Vectors expressing high levels of the peptides can be used in immunotherapy and immunoprophylaxis when expressed in humans. The antibodies are used for passive immunostation therapy to prevent or increase resistance to toxic shock syndrome or expressed in humans. The antibodies are used for passive immunisation therapy to prevent or increase resistance to toxic shock syndrome or expressed in humans. The antibodies are used for passive immunisation therapy to prevent or increase resistance to toxic shock syndrome or expressed and to ameliorate the effects of conditions associated with the presence of staphylococcal or streptococcal pyrogenic toxins. The amino acid sequences of the peptides are sufficiently common that they can be used for eliciting antibodies which are cross reactive with toxins derived from various bacteria. Sequences AAY97838-Y978343 represent the synthetic peptides based on consensus consensus regions 1 and 2 of Staphylococcus aureus and Group A streptococcal pyrogenic toxins.

These peptides can be administered to a mammal to raise serum antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 12
                                                                                             Peptide #6343, derived from streptococcal and staphylococcal toxins.
                                                                                                                                                                                                                                                                                                                                     AAY72176 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          share similar biological activities. They stimulate CD4+, CD8+ and gamma-delta+ T-cells by binding the beta-chain variable region (V-beta) elements on the lateral face of the T-cell receptor (TCR) while simultaneously binding the lateral face of the class II major histocompatibility complex (MHC) of antigen presenting cells. This causes aberrant proliferation of T-cells, which stimulates other components of the immune system, causing injury to the host. The peptides are used to prevent, treat or protect against toxic shock and septic shock resulting from bacterial infections in mammals, particularly humans. The peptides are used for inducing serum antibodies that bind at least one
                                                                                                                                                                                    24-APR-2001
                                                                                                                                                                                                                                                              AAY72176;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     X9-X10-X11-X12-X13-D-X14-X15-X16-R-X17-X18-X27-X19-X20-X21-X22-X23-X24-Y (AAY97864), where: X1, X8, X13 and X24 are each independently selected from L, I and Y, X2, X4, X5, X6, X7, X9, X10, X11, X12, X14, X15, X16, X17, X18, X19, X20, X21, X22 and X23 are each independently selected from the group consisting of any amino acid; X5 and X26 are each independently selected from the group consisting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pyrogenic toxins. The pyrogenic exotoxins of Group A streptococci and the enterotoxins of Staphylococcus aureus (which are also pyrogenic exotoxins) constitute a family of structurally related toxins which
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        X27 is either L or Y. The invention also relates to serum antibodies induced by the peptides which provide protection against, or reduce the severity of toxic shocl and septic shock caused by the staphylococcal and streptococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (regions 1 and 2) of comparation to the preferred streptococcal pyrogenic toxins: Consensus region 1a (a preferred consensus region 1) has the sequence X25-X26-Y-G-G-X1-T-X2-X3-X4-X5-N (AAVA7863) and consensus region 2a (a preferred consensus region 2) has the sequence X25-X26-Y-G-G-X1-T-X2-X3-X4-X5-N (AAVA7863) and consensus region 2a (a preferred consensus region 2) has the sequence X25-X26-Y-G-G-X1-T-X2-X3-X4-X5-N (AAVA7863) and consensus region 2a (a preferred consensus region 2) has the sequence X25-X26-Y-G-G-X1-T-X2-X3-X4-X5-N (AAVA7863) and consensus region 2a (a preferred consens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      x3, x5 and X26 are equi interpretation acid; of any amino acid and of no amino acid;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for protection against or amelioration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the sequence K-X6-X7-X8-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             consensus amino acid sequence derived from two conserved regions (regions 1 and 2) of Staphylococcus aureus enterotoxins and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cmyggvtehegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                        12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 72; DB
Pred. No. 3.5
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of toxic or septic shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               shock
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       has
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       streptococal pyrogenic exotoxin.

The peptide, nucleic acid encoding the peptide and antibody (Ab) produced against the peptide are useful for inhibiting blastogenesis of mononuclear cells (eg. T cells) in the presence of human immunodeficiency virus (HIV), inhibiting HIV replication and protecting a mammal against the deleterious effects of HIV. The peptide is also used to ameliorate the effects of autoimmune diseases associated with the presence of HIV. The Ab is used for passively immunising a mammal against the deleterious effects of HIV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Providing protection against, and reducing the severity of, human immunodeficiency virus infections and associated deleterious effects, using peptides from homologous sequences of staphylococcal and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 5; Page 38; 76pp; English
01-APR-1998;
                                                                                      W09845325-A1
                                                                                                                                    Staphylococcus :
                                                                                                                                                                                 Synthetic.
                                                                                                                                                                                                                               autoimmune
                                                                                                                                                                                                                                                  staphylococcal enterotoxin; streptococcal pyrogenic toxin; antibody;
                                                                                                                                                                                                                                                                        Toxic shock syndrome; immunogenic response; bacterial infection;
                                                                                                                                                                                                                                                                                                                                                                                                                   AAW72424;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW72424 standard; peptide; 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence is peptide #6343, derived from region 1 of the homologous sequences of staphylococcal enterotoxin and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     streptococcal toxins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-080820/09.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UYRQ ) UNIV ROCKEFELLER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-JUN-2000; 2000WO-US16680.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200078790-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               streptococcal pyrogenic exotoxin; autoimmune disease; immunisation.
                                           15-OCT-1998
                                                                                                                                                                                                                                                                                                                      Peptide #3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  l Similarity
12; Conser
                                                                                                                                                                                                                                                                                                                      for reducing symptoms of toxic shock syndrome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              s sp.
                                                                                                                                    sp.
98WO-US06663.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0336627.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zabriskie JB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 72; DB 22;
Pred. No. 3.5e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

<u>දි</u>

```
RESULT
AAY97840
ID AAY9
XX AY9
AC AAY9
XX Pyro
DE Stap
XX Pyro
KW Pyro
KW stap
KW stap
KW stap
KW antii
OS Stap
OS Stre
PN W020
XX W20
PN W020
XX Y3
PF 24-S
PF 18-J
XX
XX (UYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CC The present invention describes peptides having consensus sequences #1 CC or #2, optionally as part of a larger molecule of size at least 6-8 kD. CC Where consensus sequence #1 and #2 are: X25X26YGGXITXZX3X4X5N #1, CC KX6X7X8X9X10X11X1ZX13DX14X15X16RX17X18X27X19X20X21X2ZX3X24Y #2, where CC X1, X8, X13 and X24 = L, I or V; X3, X25 and X26 = any amino acid (aa) CC or are absent; X27 = L or Y; all other X may be any aa. The peptides CC can be used to generate serum antibodies (Ab) that bind at least one CC staphylococcal enterotoxin (SE) or streptococcal endotoxin (SPE). Ab CC are used: (i) for diagnostic detection of SPEA or SEA, SEB and SED, in CC usual immunoassays; (ii) to inhibit blastogenesis of human mononuclear CC cells in presence of these toxins (1.e. to protect against or alleviate CC and (iii) for passive immunisation against effects of the toxins. The CC peptides generate Ab that are cross-reactive with bacterial infections); CC and (iii) for passive immunisation against effects of the toxins. The CC peptides generate Ab that are cross-reactive with toxins from a variety CC of bacteria. The present sequence represents a specifically claimed CC example of a peptide of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                         Synthetic.
Staphylococcus aureus.
Streptococcus sp. 'Gro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI;
                                              07-OCT-1998;
18-JUN-1999;
                                                                                                                                                            WO200020598-A1
                                                                                                                                                                                                                                                                             staphylococcal
                                                                                                                                                                                                                                                                                                                           Staphylococcal/streptococcal pyrogenic toxin-derived peptide,
                                                                                                                                                                                                                                                                                                                                                                                               AAY97840;
                                                                                                                                                                                                                                                                                                                                                                                                                              AAY97840 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 4; Page 53; 69pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              shock and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New peptides that generate antibodies against staphylococcal and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bannan JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UYRQ ) UNIV ROCKEFELLER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-APR-1997;
             (UYRQ ) UNIV ROCKEFELLER
                                                                                             24-SEP-1999;
                                                                                                                               13-APR-2000
                                                                                                                                                                                                                                                                           Pyrogenic exotoxin; enterotoxin; staphylococcal infection; septic
                                                                                                                                                                                                                                                                                                                                                            29-AUG-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1998-568335/48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cmyggvtehegn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l Similarity
12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ccal toxins - used to diagnose, treat or prevent toxic autoimmune diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zabriskie JB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA;
                                            98US-0168303
99US-0335581
                                                                                             99WO-US22180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97US-0838413.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12
                                                                                                                                                                                           'Group A'.
                                                                                                                                                                                                                                                                                                                                                                                                                                14 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 72;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                             streptococcal infection; shock; toxic shock; vacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 19;
. 4.2e-06;
ches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

Bannan JD,

Zabriskie JB

```
δÃ
                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                              CC share similar biological activities. They stimulate CD4+. (D8+ and C gamma-delta+ T-cells by binding the beta-chain variable region (V-beta) CC elements on the lateral face of the T-cell receptor (TCR) while CC simultaneously binding the lateral face of the class II major Nistocompatibility complex (MHC) of antigen presenting cells. This causes CC aberrant proliferation of T-cells, which stimulates other components of the immune system, causing injury to the host. The peptides are used to grevent, treat or protect against toxic shock and septic shock resulting CC from bacterial infections in mammals, particularly humans. The peptides CC are used for inducing serum antibodies that bind at least one CC staphylococcal enterotoxin or streptococcal exterial toxins. Nucleic acids encoding a peptide of the invention can be used for the production of the peptides for diagnostic reagents, as vaccines and for therapies CC acids encoding a peptide of the invention can be used for therapies CC for pyrogenic exotoxin related diseases. Vectors expressing high levels CC expressed in humans. The antibodies are used for passive immunisation CC expressed in humans. The antibodies are used for passive immunisation CC septic shock and to ameliorate the effects of conditions associated with the presence of staphylococcal or streptococcal pyrogenic toxins. The amino acid sequences of the peptides are sufficiently common that they can be used for eliciting antibodies which are cross-reactive with toxins derived from various bacteria. Sequences AAY97838 x978343 represent the conditions associated with the south of the peptides based on consensus regions 1 and 2 of the conditions associated with the conditions associated with toxins derived from various bacteria. Sequences AAY97838 x978343 represent the conditions associated with toxins derived from various bacteria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to novel peptides (AAY97838-Y97843) comprising a consensus amino acid sequence derived from two conserved regions (regions 1 and 2) of Staphylococcus aureus enterotoxins and streptococcal pyrogenic toxins. Consensus region 1a (a preferred consensus region 1) has the sequence X25-X26-Y-G-G-X1-T-X2-X3-X4-X5-N (AAY97863) and consensus region 2a (a preferred consensus region 2) has the sequence X-7-X19-X20-X21-X2-X3-X4-Y (CAX97864), where: X1, X8, X13 and X24 are each independently selected from CC (AAY97864), where: X1, X8, X13 and X24 are each independently selected from CC (X17, X18, X19, X20, X21, X22 and X23 are each independently selected from CC the group consisting of any amino acid. CC the group consisting of any amino acid and of no amino acid. The invention also relates to serum antibodies induced by the peptides of the provide protection against for reduce the severity of the poptides.
                                                                                                        Matches
                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                         synthetic peptides based on consensus consensus regions 1 and 2 of Staphylococcus aureus and Group A streptococcal pyrogenic toxins. These peptides can be administered to a mammal to raise serum antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            which provide protection against, or reduce the severity of toxic shock and septic shock caused by the staphylococcal and streptococcal pyrogenic toxins. The pyrogenic exotoxins of Group A streptococci and the enterotoxins of Staphylococcus aureus (which are also pyrogenic exotoxins) constitute a family of structurally related toxins which share similar belowed a family of structurally related toxins which
                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                           for protection against or amelioration of toxic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peptides useful for preventing syndrome and septic shock from infections -
                                                                                                        Local Similarity
nes 12; Conserv
                                                    1 CMYGGVTEHEGN 12
cmyggvtehegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4; Page
                                                                                                                                                                                                                                         14
                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Visvanathan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     115pp; English
                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ~
                                                                                                        0;
                                                                                                                                 Score 72;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and reducing the symptoms of toxic shock staphylococcal and streptococcal
                                                                                                        Mismatches
                                                                                                                              4.2e-06;
                                                                                                                                                          DB 21;
                                                                                                                                                                                                                                                                                           ç
                                                                                                                                                       Length 14;
                                                                                                                                                                                                                                                                                        septic shock
                                                                                                   0
                                                                                                Gaps
                                                                                                   0;
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                    Ş
```

RESULT

Toxic shock syndrome; immunogenic response; bacterial infection; staphylococcal enterotoxin; streptococcal pyrogenic toxin; antib

streptococcal pyrogenic

toxin; antibody;

0;

```
AAW72426
ID AAW7
XX
AC AAW7
XX
AC AAW7
XX
DT 22-I
XX
DE Pept
XX
KW Toxi
                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 12
                                        Peptide #5 for reducing symptoms of toxic shock syndrome
                                                                                                    AAW72426;
                                                                                                                                                                                                                                                                                                                                                             virus (HIV), inhibiting HIV replication and protecting a mammal against the deleterious effects of HIV. The peptide is also used to ameliorate the effects of autoimmune diseases associated with the presence of HIV. The Ab is used for passively immunising a mammal against the deleterious effects of HIV.
                                                                       22-DEC-1998
                                                                                                                               AAW72426 standard; peptide;
                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                             streptococcal pyrogenic exotoxin.

The peptide, nucleic acid encoding the peptide and antibody (Ab) produced against the peptide are useful for inhibiting blastogenesis of mononnuclear cells (eg. T cells) in the presence of human immunodeficiency
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence is peptide #6344, a cross-linked polymer derived from the homologous sequences of staphylococcal enterotoxin and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 5; Page 38; 76pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                streptococcal toxins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Providing protection against, and reducing the severity of, human immunodeficiency virus infections and associated deleterious effects, using peptides from homologous sequences of staphylococcal and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mononuclear cell; blastogenesis; inhibitor; HIV; replication; therapy; staphylococcal enterotoxin; human immunodeficiency virus; T cell; streptococcal pyrogenic exotoxin; autoimmune disease; immunisation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200078790-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptide #6344,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY72178 standard; peptide; 14 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-JUN-2000; 2000WO-US16680
                                                                                                                                                                                                       \vdash
                                                                                                                                                                                                                                1 CMYGGVTEHEGN
                                                                                                                                                                                                  2001-080820/09.
                                                                                                                                                                                                                                                           l Similarity 100
12; Conservative
                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         derived from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0336627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zabriskie JB;
                                                                                                                                                                                                     12
                                                                                                                                                                                                                                                           100.0%; ;
100.0%; ;
tive 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entry)
                                                                                                                                36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        streptococcal and staphylococcal
                                                                                                                                                                                                                                                                         Score 72;
Pred. No.
                                                                                                                                                                                                                                                           DB 22;
. 4.2e-06;
ches 0;
                                                                                                                                                                                                                                                                                      Length 14;
                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         toxins
                                                                                                                                                                                                                                                           Gaps
```

```
RESULT
AAY9784
ID AA
ID AA
XX AA
XX AA
XX 29
AC AA
XX 29
CT 29
CT 29
CT XX
CT 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        X1, X8, X13 and X24 = L, I or V; X3, X25 and X26 = any amino acid (aa) or are absent; X27 = L or Y; all other X may be any aa. The peptides can be used to generate serum antibodies (Ab) that bind at least one staphylococcal enterotoxin (SE) or streptococcal endotoxin (SPE). Ab are used: (1) for diagnostic detection of SPEA or SEA, SEB and SED, in usual immunoassays; (11) to inhibit blastogenesis of human mononuclear cells in presence of these toxins (i.e. to protect against or alleviate toxic shock or autoimmune disease associated with bacterial infections); and (1ii) for passive immunisation against effects of the toxins. The peptides generate Ab that are cross-reactive with toxins from a variety of bacteria. The present sequence represents a specifically claimed example of a peptide of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention describes peptides having consensus sequences or #2, optionally as part of a larger molecule of size at least 6-8 where consensus sequence #1 and #2 are: x25x26Y63X1TX2XX4X5N #1, KX6X7X8X9X10X11X12X13DX14X15X16RX17X18X27X19X20X21X22X23X24Y #2, whe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New peptides that generate antibodies against staphylococcal and streptococcal toxins - used to diagnose, treat or prevent toxic shock and autoimmune diseases
                     Streptococcus
                                                         Synthetic. Staphylococcus aureus.
                                                                                                                                                                       Pyrogenic exotoxin; enterotoxin; streptococcal infection; staphylococcal infection; septic shock; toxic shock; vaccine
                                                                                                                                                                                                                                                             Staphylococcal/streptococcal pyrogenic toxin-derived peptide,
                                                                                                                                                                                                                                                                                                                             29-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                    AAY97842;
                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY97842 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-OCT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9845325-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Staphylococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cmyggvtehegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zabriskie JB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ξ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54; 69pp; English
                              sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97US-0838413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98WO-US06663
                              'Group A'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                              36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 72;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.2e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          where
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 £ #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
CC exotoxins) constitute a family of structurally related toxins which constitute a family of structurally related toxins which compared to the property of the present on the lateral face of the T-cell receptor (TCR) while compared to the lateral face of the T-cell receptor (TCR) while compared to the lateral face of the Class II major compared to the lateral face of the class II major compared to the lateral face of the class II major compared to the instruction of T-cells, which stimulates other components of the instruction of T-cells, which stimulates other components of the immune system, causing injury to the host. The peptides are used to prevent, treat or protect against toxic shock and septic shock resulting cf from bacterial infections in mammals, particularly humans. The peptides care used for inducing serum antibodies that bind at least one components of disease related to the presence of bacterial toxins. Nucleic diagnosis of disease related to the presence of bacterial toxins. Nucleic acids encoding a peptide of the invention can be used for the production of the peptides for diagnostic reagents, as vaccines and for therapies cof the peptides can be used in immunotherapy and immunoprophylaxis when cappered to the presence of staphylococcal existance to toxic shock syndrome or therapy to prevent or increase resistance to toxic shock syndrome or consensus consensus reactive with toxins cappiled from various bacteria. Sequences Axy788-xy73343 represent the contribus based on consensus consensus reactions 1 and 2 of the presence of staphylococcal or consensus consensus reactions 1 and 2 of the present described in the consensus consensus reactions 1 and 2 of the synthetic pentides are used from various bacteria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to novel peptides (AAY97838-Y97843) comprising a consensus amino acid sequence derived from two conserved regions (regions 1 and 2) of Staphylococcal sureus enterotoxins and streptococcal pyrogenic toxins. Consensus region 1a (a preferred consensus region 1) has the sequence X25-X26-Y-G-G-X1-T-X2-X3-X4-X5-N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and septic shock caused by the staphylococcal and streptococcal pyrogenic toxins. The pyrogenic exotoxins of Group A streptococci and the enterotoxins of Staphylococcus aureus (which are also pyrogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (AAY97864), where: X1, X8, X13 and X24 are each independently selected from L, I and V; X2,74, X5, X6, X7, X9, X10, X11, X12, X14, X15, X16, X17, X18, X19, X20, X21, X22 and X23 are each independently selected from the group consisting of any amino acid; X3, X5 and X26 are each independently selected from the group consisting
                                                                   synthetic peptides based on consensus consensus regions 1 and 2 staphylococcus aureus and Group A streptococcal pyrogenic toxins. These peptides can be administered to a mammal to raise serum an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               x27 is either L or Y.
The invention also relates to serum antibodies induced by the peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 4; Page 88; 115pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peptides useful for preventing syndrome and septic shock from infections -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (UYRQ ) UNIV ROCKEFELLER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-OCT-1998;
18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200020598-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        which provide protection against, or reduce the severity of toxic shock
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of any amino acid and of no amino acid;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      x9-x10-x11-x12-x13-D-x14-x15-x16-R-x17-x18-x27-x19-x20-x21-x22-x23-x24-y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the sequence K-X6-X7-X8-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  infections
                                              for protection against or amelioration of toxic or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (AAY97863) and consensus region 2a (a preferred consensus region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000-303782/26.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'n,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0168303.
99US-0335581.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99WO-US22180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zabriskie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and reducing the symptoms of toxic shock staphylococcal and streptococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JB;
                                                                           raise serum antibodies
                                                 shock.
```

has

Sequence

```
RESULT AAY72180
ID AAY7
XX AAY7
XX AAY7
XX Pept
XX Pept
XX Pept
XX Pept
XX Pept
XX Wool
KW Stall
KW Stall
KW Stall
XX WO2
YX WO2
YX WO2
YX WO2
YX WO2
YX WO2
YX WF
PF 16--
XX UY
PF 18--
YX WFI
PF PT Str
XX WFI
PF Str
XX WFI
CC Seq
CC Seq
CC The
CC The
CC The
CC The
CC The
CC Eff
CC Seq
CC The
CC Seq
CC 
  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 12
                                                                                                                                  Query Match
Best Local
                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                     The peptide, nucleic acid encoding the peptide and antibody (Ab) produced against the peptide are useful for inhibiting blastogenesis of mononuclear cells (eg. T cells) in the presence of human immunodeficiency virus (HIV), inhibiting HIV replication and protecting a mammal against the deleterious effects of HIV. The peptide is also used to ameliorate the effects of autoimmune diseases associated with the presence of HIV. The Ab is used for passively immunising a mammal against the deleterious
                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence is peptide #6347, derived from the homologous sequences of staphylococcal enterotoxin and streptococcal pyrogenia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 5; Page 38; 76pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                streptococcal toxins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Providing protection against, and reducing the severity of, human immunodeficiency virus infections and associated deleterious effects, using peptides from homologous sequences of staphylococcal and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Streptococcus sp. Staphylococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mononuclear cell; blastogenesis; inhibitor; HIV; replication; th staphylococcal enterotoxin; human immunodeficiency virus; T cell streptococcal pyrogenic exotoxin; autoimmune disease; immunisati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY72180 standard; peptide; 36 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-JUN-2000; 2000WO-US16680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200078790-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY72180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UYRQ ) UNIV ROCKEFELLER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peptide #6347,
                                                                                                                                     Local Similarity
  ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                       CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CMYGGVTEHEGN 12
cmyggvtehegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2001-080820/09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cmyggvtehegn 12
                                                                                                         12;
                                                                                                                                                                                                                                                                                                    is used for s of HIV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                               36
                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0336627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               derived from streptococcal and staphylococcal toxins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zabriskie JB
                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .0%;
                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 72;
Pred. No.
                                                                                                                                  Score 72; [Pred. No. 1.
                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 21;
1.2e-05;
                                                                                                       DB 22;
1.2e-05;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                         Length 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 36;
                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pyrogenic
                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          therapy;
                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

RESULT

10

```
RESULT 1
AAY97843
ID AAY9
XX
AC AAY9
XX
AC AAY9
XX
AC 29-A
                                                                                                                                  Вр
                                                                                                                                                            Ş
                                                                                                                                                                                            Matches
                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                      X1, X8, X13 and X24 = L, I or V; X3, X25 and X26 = any amino acid (aa) or are absent; X27 = L or V; all other X may be any aa. The peptides can be used to generate serum antibodies (Ab) that bind at least one staphylococcal enterotoxin (SE) or streptococcal endotoxin (SPB). Ab are used: (i) for diagnostic detection of SPEA or SEA, SEB and SED, in usual immunoassays; (ii) to inhibit blastogenesis of human mononuclear cells in presence of these toxins (i.e. to protect against or alleviate toxic shock or autoimmune disease associated with bacterial infections); and (iii) for passive immunisation against effects of the toxins. The
   29-AUG-2000
                                                                                                                                                                                                                                                                                           peptides generate Ab that are cross-reactive with toxins from a variety of bacteria. The present sequence represents a specifically claimed example of a peptide of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention describes peptides having consensus sequences or #2, optionally as part of a larger molecule of size at least 6-8 where consensus sequence #1 and #2 are: X25X20YGXXITX2X3XXXXN #1, KX6X7X8X9X10X11X12X13DX14X15X16RX17X18X27X19X20X21X22X23X24Y #2, who
                              AAY97843;
                                                         AAY97843 standard;
                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 4; Page 54; 69pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              shock and autoimmune diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New peptides that generate antibodies against staphylococcal and streptococcal toxins - used to diagnose, treat or prevent toxic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic.
Staphylococcus sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Toxic shock syndrome; immuno staphylococcal enterotoxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW72427 standard; peptide; 38 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1998-568335/48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bannan JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-OCT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO9845325-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide #6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (UYRQ ) UNIV ROCKEFELLER.
                                                                                        11
                                                                                                                                                1 CMYGGVTEHEGN 12
                                                                                                                                cmyggvtehegn 12
                                                                                                                                                                                          12;
                                                                                                                                                                                                                                                                   38 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for reducing symptoms of toxic shock syndrome
                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zabriskie JB;
 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97US-0838413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98WO-US06663.
                                                         peptide;
                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                immunogenic response; bacterial infection;
                                                           38
                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 streptococcal pyrogenic toxin;
                                                                                                                                                                                                         Score 72;
Pred. No.
                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                         1.2e-05;
                                                                                                                                                                                                                        DB 19;
                                                                                                                                                                                             0;
                                                                                                                                                                                                                       Length 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      antibody;
                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nces #1
                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           where
                                                                                                                                                                                            0;
```

```
CC and septic shock caused by the staphylococcal and streptococcal
CC pyrogenic toxins. The pyrogenic exotoxins of Group A streptococcal
CC exotoxins) constitute a family of structurally related toxins which
CC exotoxins) constitute a family of structurally related toxins which
CC exotoxins) constitute a family of structurally related toxins which
CC share similar biological activities. They stimulate CD4+, CD8+ and
CC elements on the lateral face of the T-cell receptor (TCR) while
CC simultaneously binding the beta-chain variable region (V-beta)
CC elements on the lateral face of the class II major
CC instocompatibility complex (MHC) of antigen presenting cells. This causes
CC aberrant proliferation of T-cells, which stimulates other components of
CC prevent, treat or protect against toxic shock and septic shock resulting
CC from bacterial infections in mammals, particularly humans. The peptides
CC are used for inducing serum antibodies that bind at least one
CC staphylococcal enterotoxin or streptococcal exotoxin and both the
CC diagnosis of disease related to the presence of bacterial toxins. Nucleic
CC diagnosis of disease related to the presence of bacterial toxins. Nucleic
CC diagnosis of disease related to the presence of bacterial toxins. Nucleic
CC of the peptides for diagnostic reases. Vectors expressing high levels
CC of the peptides can be used in immunotherapy and immunoprophylaxis when
CC expressed in humans. The antibodies are used for passive immunisation
CC septic shock and to ameliorate the effects of conditions associated with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of any amino acid and of no amino acid; X27 is either L or Y.

The invention also relates to serum antibodies induced by the peptides which provide protection against, or reduce the severity of toxic shock which provide protection against.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to novel peptides (AAY97838-Y97843) comprising a consensus amino acid sequence derived from two conserved regions (regions 1 and 2) of Staphylococcus aureus enterotoxins and streptococcal pyrogenic toxins. Consensus region 1a (a preferred consensus region 1) has the sequence x25-x26-Y-G-G-X1-Y-X2-X3-X4-X5-N (AAY97863) and consensus region 2a (a preferred consensus region 2) has the sequence K-X6-X7-X8

V9-X10-X11-X12-X13-D-X14-X15-X16-R-X17-X18-X27-X19-X20-X21-X22-X23-X24-Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 4; Page 88; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (AAY97864), where: X1, X8, X13 and X24 are each independently selected from L, I and V; X2, X4, X5, X6, X7, X9, X10, X11, X12, X14, X15, X16, X17, X18, X19, X20, X21, X22 and X23 are each independently selected from the group consisting of any amino acid; 33, X5 and X6 are each independently selected from the group consisting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Peptides useful for preventing syndrome and septic shock from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-OCT-1998;
18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200020598-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Staphylococcus aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            inrections
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (UYRQ ) UNIV ROCKEFELLER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pyrogenic exotoxin; enterotoxin; streptococcal infection; staphylococcal infection; septic shock; toxic shock; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Staphylococcal/streptococcal pyrogenic toxin-derived peptide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Visvanathan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0168303
99US-0335581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US22180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'Group A'.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zabriskie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and reducing the symptoms of toxic shock staphylococcal and streptococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            shock
```

```
RESULT
AAYZIAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8888888x&
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the presence of staphylococcal or streptococcal pyrogenic toxins. The amino acid sequences of the peptides are sufficiently common that they can be used for eliciting antibodies which are cross-reactive with toxins derived from various bacteria. Sequences AAY97838-Y978343 represent the synthetic peptides based on consensus consensus regions 1 and 2 of Staphylococcus aureus and Group A streptococcal pyrogenic toxins. These peptides can be administered to a mammal to raise serum antibodies for protection against or amelioration of toxic or septic shock.
                                                                              The peptide, nucleic acid encoding the peptide and antibody (Ab) produced against the peptide are useful for inhibiting blastogenesis of mononuclear cells (eq. T cells) in the presence of human immunodeficiency virus (HIV), inhibiting HIV replication and protecting a mammal against the deleterious effects of HIV. The peptide is also used to ameliorate the effects of autoimmune diseases associated with the presence of HIV. The peptide is also used to ameliorate the effects of autoimmune diseases associated with the presence of HIV.
                                                                                                                                                                                                                                                                                                                                  The present sequence is peptide #6348, a cross-linked polymer from the homologous sequences of staphylococcal enterotoxin ar
                                                                                                                                                                                                                                                                                                                                                                                                                          Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      providing protection against, and reducing the severity of, human immunodeficiency virus infections and associated deleterious effections peptides from homologous sequences of staphylococcal and streptococcal toxins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200078790-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Streptococcus sp. Staphylococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       staphylococcal enterotoxin; human immunodeficiency virus; T cell; streptococcal pyrogenic exotoxin; autoimmune disease; immunisation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Peptide #6348,
                                                           effects
                                                                                                                                                                                                                                                                                                  from the homologous sequences of staphylococcal streptococcal pyrogenic exotoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-JUN-2000; 2000WO-US16680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mononuclear cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAY72181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY72181 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CMYGGVTEHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cmyggvtehegn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-080820/09
                                                                                                                                                                                                                                                                                                                                                                                                                          5; Page 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12;
                                                           of HIV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ж</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  derived from streptococcal and staphylococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0336627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zabriskie JB
                                                                                                                                                                                                                                                                                                                                                                                                                       76pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         blastogenesis; inhibitor; HIV; replication;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 72; DB 21;
Pred. No. 1.2e-05;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ous effects,
l and
                                                                                                                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     toxins.
                                                                                                                                                                                                                                                                                                                                                                 derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

38

```
RESULT 1
AAY97845
ID AAY97845
ID AAY97845
ID AAY9
AC AAY9
AC AAY9
AC AAY9
AC Stap
XX 13-A
XX AAY9
PN WO20
XX 13-A
XX 14-A
XX 14-A
XX 15-A
XX 17-C
PR 18-J
PR 18-J
PR WPI;
XX Banr
XX WPI;
XX Banr
XX CC Cons
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       uery match 100.0%;
Best Local Similarity 100.0%;
Matches 12; Conservative 0
pyrogenic toxins. The pyrogenic exotoxins of Group A streptococci and the enterotoxins of Staphylococcus aureus (which are also pyrogenic exotoxins) constitute a family of structurally related toxins which share similar biological activities. They stimulate CD4+, CD8+ and gamma-delta+ T-cells by binding the beta-chain variable region (V-beta) elements on the lateral face of the T-cell receptor (TCR) while simultaneously binding the lateral face of the class II major histocompattbility complex (MHC) of antigen presenting cells. This causes aberrant proliferation of T-cells, which stimulates other components of
                                                                                                                                                                                                                                                                                                                                                                                          (AAY97864), where: X1, X8, X13 and X24 are each independently selected from L, I and V; X2, X4, X5, X6, X7, X9, X10, X11, X12, X14, X15, X16, X17, X18, X19, X20, X21, X22 and X23 are each independently selected from the group consisting of any amino acid; X3 x5 and X26 are each independently selected from the group consisting of any amino acid and of no amino acid; X27 is either L or Y.
                                                                                                                                                                                                                                                                                            The invention also relates to serum antibodies induced by the peptides which provide protection against, or reduce the severity of toxic shoc and septic shock caused by the staphylococcal and streptococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (regions 1 and 2) of Staphylococcus aureus enterotoxins and streptococcal pyrogenic toxins. Consensus region 1a (a preferred consensus region 1) has the sequence x25-x26-y-G-G-X1-T-x2-x3-x4-x5-N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Peptides useful for preventing and reducing the symptoms of toxic shock syndrome and septic shock from staphylococcal and streptococcal infections -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-OCT-1998;
18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the sequence K-X6-X7-X8-
X9-X10-X11-X12-X13-D-X14-X15-X16-R-X17-X18-X27-X19-X20-X21-X22-X23-X24-Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     consensus amino acid sequence derived from two conserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to novel peptides (AAY97838-Y97843) comprising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Example 1; Page 72; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bannan JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Staphylococcus aureus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (AAY97863) and consensus region 2a (a preferred consensus region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200020598-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY97845 standard; peptide; 12 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Staphylococcal infection; enterotoxin; septic shock; toxic shock;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Staphylococcus aureus enterotoxin SEB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-AUG-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 cmyggvtehegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0168303
99US-0335581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99WO-US22180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zabriskie JB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 72; DE
Pred. No. 1.2
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            conserved region 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 22;
1.2e-05;
thes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  regions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2)
                                                                                                                                                                                                                                                                                                                                 shock
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      has
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the immune system, causing injury to the host. The peptides are used to prevent, treat or protect against toxic shock and septic shock resulting from bacterial infections in mammals, particularly humans. The peptides are used for inducing serum antibodies that bind at least one staphylococcal enterotoxin or streptococcal exotoxin and both the peptides and antibodies can be used in diagnostic assays to aid in the diagnosis of disease related to the presence of bacterial toxins. Nucleic acids encoding a peptide of the invention can be used for the production of the peptides for diagnostic reagents, as vaccines and for theraples for the peptides can be used in immunotherapy and immunoprophylaxis when expressed in humans. The antibodies are used for passive immunisation therapy are the production of the peptides can be used in immunotherapy and immunoprophylaxis when expressed in humans. The antibodies are used for passive immunisation that the peptides can be used in immunotherapy and immunoprophylaxis when expressed in humans. The antibodies are used for passive immunisation that the peptides can be used in immunotherapy and immunoprophylaxis when the period of the peptides can be used in immunotherapy and immunisation that the period of the peptides can be used in immunotherapy and immunisation that the period of the peptides can be used in immunotherapy and immunoprophylaxis when the period of the peptides can be used in immunotherapy and immunoprophylaxis when the period of the peptides can be used in immunotherapy and immunoprophylaxis when the period of the peptides can be used in immunotherapy and immunoprophylaxis when the period of the peptides can be used in immunotherapy and immunoprophylaxis when the period of the peptides can be used in immunotherapy and immunoprophylaxis when the period of the peptides can be used in immunotherapy and immunoprophylaxis when the period of the peptides can be used in immunotherapy and immunoprophylaxis when the period of the peptides can be used for period of the pepti
                                                                                                                                                                                                 Peptides useful for preventing syndrome and septic shock from
                                                                                                                                                                                                                                                                                                                                                                                                                                07-OCT-1998;
18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    therapy to prevent or increase resistance to toxic shock syndrome or septic shock and to ameliorate the effects of conditions associated with the presence of staphylococcal or streptococcal pyrogenic toxins. The amino acid sequences of the peptides are sufficiently common that they can be used for eliciting antibodies which are cross-reactive with toxins derived from various bacteria. Sequences AAY97844-Y97852 represent
                                                                                                                                                                                                                                                                            WPI; 2000-303782/26
                                                                                                                                                                                                                                                                                                                           Bannan JD,
                                                                                                                                                                                                                                                                                                                                                                           (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-APR-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200020598-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Staphylococcus aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  vaccine; antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Staphylococcal infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Staphylococcus aureus enterotoxin SEC, conserved region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY97846;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Group A streptococci pyrogenic exotoxins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               derived from various bacteria. Sequences AAY97844-Y97852 represent conserved region 1 of various Staphylococcus aureus enterotoxins and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY97846 standard; peptide; 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 cmyggvtehngn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CMYGGVTEHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12 AA;
                                                                                                                                                                                                                                                                                                                           Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                98US-0168303
99US-0335581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US22180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       enterotoxin; septic shock; toxic shock;
                                                                                                                                                                                                                                                                                                                           Zabriskie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 67; DB 21;
Pred. No. 2.6e-05;
                                                                                                                                                                                               and reducing the symptoms of toxic shock staphylococcal and streptococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                           JB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

The invention relates to novel peptides (AAY97838-Y97843) comprising consensus amino acid sequence derived from two conserved regions (regions 1 and 2) of Staphylococcus aureus enterotoxins and

Example 1;

72;

115pp; English.

streptococcal pyrogenic toxins. Consensus region la

preferred

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CC pyrogenic toxins. The pyrogenic exotoxins of Group A streptococci and CC the enterotoxins of Staphylococcus aureus (which are also pyrogenic exotoxins) constitute a family of structurally related toxins which CC exotoxins) constitute a family of structurally related toxins which CC share similar biological activities. They stimulate CD4+, CD8+ and CC elements on the lateral face of the T-cell receptor (TCR) while CC simultaneously binding the lateral face of the class II major his causes aberrant proliferation of T-cells, which stimulates other components of the inmune system, causing injury to the host. The peptides are used to the inmune system, causing injury to the host. The peptides are used for inducing serum antibodies that bind at least one coding a peptide of the invention can be used for the peptides and antibodies can be used in diagnostic assays to aid in the C peptides and antibodies can be used in diagnostic assays to aid in the C peptides and peptide of the invention can be used for the production of the peptides can be used in immunotherapy and immunoprophylaxis when c syrogenic exotoxin related diseases. Vectors expressing high levels of the presence of staphylococcal or interapres resistance to toxic shock syndrome or septic shock and to ameliorate the effects of conditions associated with the researce of staphylococcal or streptococcal pyrogenic toxins. The c condition acid sequences of the peptides are used for passive immunisation can be used for warious bacterial toxins which are cross-reactive with toxins can be used from various bacterial toxins associated with the condition acid sequences of the peptides are sufficiently common that they can be used for warious bacteria. Sequences Axy7844-y7952 represent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       x27 is either L or Y.

The invention also relates to serum antibodies induced by the peptides which provide protection against, or reduce the severity of toxic shock which provide protection against, or reduce the severity of toxic shock which provide protections as the protection of the provided and septic shock caused by the stabhylococcal and streptococcal and septic shock caused by the streptococcal and streptococcal and septic shock caused by the streptococcal and streptococcal and septic shock caused by the streptococcal and streptococcal a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (AAY97864), where: x1, x8, x13 and x24 are each independently selected from L, I and V; x2,x4, x5, x6, x7, x9, x10, x11, x12, x14, x15, x16, x17, x18, x19, x20, x21, x22 and x23 are each independently selected from the group consisting of any amino acid; x3, x5 and x26 are each independently selected from the group consisting of any amino acid and of no amino acid;
                                                                                                                                       Mononuclear cell; blastogenesis; inhibitor; HIV; replicatistaphylococcal enterotoxin; human immunodeficiency virus; autoimmune disease; immunisation.
                                                                     Staphylococcus sp
                                                                                                                                                                                                                                                                                   Peptide from region 1 of staphylococcal enterotoxin SEB.
                                                                                                                                                                                                                                                                                                                                                        24-APR-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY72183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY72183 standard; peptide; 12 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Group A streptococci pyrogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           derived from various bacteria. Sequences AAY97844-Y97852 represenconserved region 1 of various Staphylococcus aureus enterotoxins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  consensus region 1) has the sequence X25-X26-Y-G-G-X1-T-X2-X3-X4-X5-N (AAY97863) and consensus region 20 (a preferred consensus region 2) has the sequence K-X6-X7-X8-X9-X10-X11-X12-X13-D-X14-X15-X16-R-X17-X18-X27-X19-X20-X21-X22-X23-X24-Y
       WO200078790-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity 83.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |||||:|:||||
|cmyggitkhegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ξ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 67; DB 21;
Pred. No. 2.6e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              exotoxins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                    HIV; replication;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                T cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                             therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
Search completed: January Job time: 10129 sec
                                                                    밁
                                                                                            δÃ
                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                          Matches
                                                                                                                                                                                                                                 The peptide, nucleic acid encoding the peptide and antibody (Ab) produced against the peptide are useful for inhibiting blastogenesis of mononuclear cells (eg. T cells) in the presence of human immunodeficiency virus (HIV), inhibiting HIV replication and protecting a mammal against the deleterious effects of HIV. The peptide is also used to ameliorate the effects of autoimmune diseases associated with the presence of HIV. The Ab is used for passively immunising a mammal against the deleterious
                                                                                                                                                                                                                                                                                                                                The present sequence is a peptide from region 1 of staphylococcal enterotoxin SEB.
                                                                                                                                                                                                                                                                                                                                                                                                             Providing protection against, and reducing the severity of, human immunodeficiency virus infections and associated deleterious effects, using peptides from homologous sequences of staphylococcal and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI;
                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                         Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                   streptococcal toxins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UYRQ ) UNIV
                                                                 1 cmyggvtehngn
                                                                                1 CMYGGVTEHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2001-080820/09
                                                                                                                          11;
                                                                                                                                                                                                                         of HIV.
                                                                                                                                                                                            12
                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                        Page 36; 76pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000WO-US16680
                                                                                                                                                                                            AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0336627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zabriskie JB;
                                                                      12
                                                                                              12
                                                                                                                                    93.1%;
91.7%;
              ې
               2002, 20:48:13
                                                                                                                          0;
                                                                                                                         Score 67; DB Pred. No. 2.66 0; Mismatches
                                                                                                                                                   BB
                                                                                                                                       6e-05
                                                                                                                                                   Length 12;
                                                                                                                          Indels
                                                                                                                          0;
                                                                                                                         Gaps
                                                                                                                          0
```

Run

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq length: 0
seq length: 2000000000
       Query
Match
    100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    654321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Issued_Patents_AA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              212252 seqs, 22503292 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-335-581A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    January 2, 2002, 17:35:14; Search time 40.75 Seconds (without alignments) 6.627 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /cgn2_6/ptodata/2/18a/5A_COMB.pep:*
/cgn2_6/ptodata/2/18a/5B_COMB.pep:*
/cgn2_6/ptodata/2/18a/6A_COMB.pep:*
/cgn2_6/ptodata/2/18a/6B_COMB.pep:*
/cgn2_6/ptodata/2/18a/BCTUS_COMB.pep:*
/cgn2_6/ptodata/2/18a/PCTUS_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
US-08-838-413A-3
US-08-838-413A-5
US-08-838-413A-10
US-08-838-413A-10
US-08-838-413A-11
US-08-838-413A-11
US-08-896-933-2
US-08-896-933-27
US-08-896-933-27
US-08-896-933-13
US-08-896-933-13
US-08-896-933-17
US-08-896-933-17
US-08-896-933-17
US-08-896-933-17
US-08-896-933-17
US-08-896-933-17
US-08-896-933-17
US-08-896-933-17
US-08-838-413A-12
US-08-838-413A-13
US-08-838-413A-3
US-08-838-413A-3
US-08-838-413A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
Sequence 3, Appli
Sequence 7, Appli
Sequence 10, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 2, Appli
Sequence 26, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 21, Appli
Sequence 22, Appli
Sequence 23, Appli
Sequence 24, Appli
Sequence 25, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 28, Appli
Sequence 29, Appli
Sequence 21, Appli
Sequence 30, Appli
Sequence 30, Appli
Sequence 30, Appli
Sequence 30, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
    Query Match 100.0%; Score 72; DB 3; Best Local Similarity 100.0%; Pred. No. 4.1e-06; Matches 12; Conservative 0; Mismatches 0;
```

RESULT 1 US-08-838-413A Sequence 3, Patent No. 6 GENERAL INF APPLICANT TITLE OF TITLE OF TITLE OF CORRESPONI ADDRESS; STREET: STATE: STATE: COUNTRY ZILING: COMPUTER INFORMATION REFEREN REGEREN REGER	44444333333333 544444333333333333333333
13A-3 3, Applicat 3, Applicat 3, Applicat 1, 6075119 INFORMATION ANT: OF INVENTIO OF SEGUENA OF SEGUENA OF SEGUENA OF SEGUENA OF OF OF SEGUENA OF SEGUE	555 7766.4 555 7766.4 555 7766.4 555 7766.4 555 7766.4 766.4
लें के मान वायिका देवा के अधिक	14 2233 233 24 257 257 257 3 257 3 257 3 257 3 3 257 3 3 257 3 3 257 3 3 257 3 3 257 3 3 2 5 7 3 3 2 5 7 3 7 3 7 3 3 3 3 3 3 3 3 3 3 3 3 3 3
USEFUL FOR SYMPTOMS OF TOXIC AN B38,413A	US-08-896-933-9 US-08-220-378-5 US-08-696-012-5 US-08-896-933-23 US-08-896-933-23 US-08-486-099-112 US-08-486-099-112 US-08-360-107A-122 US-08-360-107A-122 US-08-360-107A-123 US-08-484-223B-113 US-08-484-223B-113 US-08-484-223B-113 US-08-475-668A-113 US-08-475-668A-113 US-08-485-551A-112
SHOCK SYNDROME	Sequence 9, Appli Sequence 5, Appli Sequence 24, Appli Sequence 23, Appli Sequence 4, Appli Sequence 112, Appli Sequence 112, App Sequence 112, App Sequence 112, App Sequence 113, App Sequence 113, App Sequence 113, App Sequence 111, App Sequence 112, App Sequence 113, App Sequence 112, App Sequence 112, App Sequence 113, App Sequence 112, App Sequence 112, App Sequence 113, App

Length 12; Indels

0;

Gaps

0,

```
; TYPE: AMINO ACID
; STRANDEDNESS: UNKNOWI
; TOPOLOGY: UNKNOWN
; MOLECULE TYPE: PEPTIDE
US-08-838-413A-5
                                                                                                                                                       US-08-838-413A-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-838-413A-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: MORRY, MARY J.
NAME: MORRY, MARY J.
REGISTRATION NUMBER: 34,398
REFERENCE/DOCKET NUMBER: 2016
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)751-6849
INFORMATION FOR SEQ ID NO: 5:
                                                                                                                    Sequence 7, Application US/08838413A Patent No. 6075119
                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 5, Application US/08838413A Patent No. 6075119
                                                                                                      GENERAL INFORMATION:
APPLICANT:
TITLE OF INVENTION: PEP
TITLE OF INVENTION: RED
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WORDDERFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/838,413A
FILING DATE: 07-APR-1997
CLASSIFICATION: 536
                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM: MEDIUM TYPE: FLOPPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: NEW YORK
STATE: NEW YORK
                                                                                                                                                                                                                                           1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                         1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 345 PARK AVENUE
                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FLOPPY DISK
                                                                                                                                                                                                                                                                                                                                                                                                                            UNKNOWN
                                                                                                                                                                                                                                                                                                         100.0%;
                                 PEPTIDES USEFUL FOR REDUCING SYMPTOMS OF TOXIC SHOCK SYNDROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PEPTIDES USEFUL FOR REDUCING SYMPTOMS OF TOXIC SHOCK SYNDROME
                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2016-4010
                                                                                                                                                                                                                                                                                                         Score 72; DB 3;
Pred. No. 4.8e-06;
                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                         Length 14;
                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                        0;
```

```
B
                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-838-413A-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-838-413A-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 8, Application US/08838413A Patent No. 6075119
                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION: TELEPHONE: (212)758-4800
TELEPAX: (212)751-6849
INFORMATION FOR SEQ ID NO: 7:
                                                                             SOFTWARE: WORDPERFECT 5.1
CURRENT APPLICATION DATA:
                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY DISK
               PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                    APPLICANT:
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: MORRY, MARY J.
REGISTRATION UNMBER: 34,398
REFERENCE/DOCKET NUMBER: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/838,413A
FILING DATE: 07-APR-1997
CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: WORDPERFECT 5.1 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM: MEDIUM TYPE: FLOPPY
                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                STREET: 345 PARK
CITY: NEW YORK
STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: MORGAI
STREET: 345 PARK
CITY: NEW YORK
STATE: NEW YORK
                             APPLICATION NUMBER: US/08/838,413A FILING DATE: 07-APR-1997 CLASSIFICATION: 536
                                                                                                                COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity hes 12; Conserv
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: AMINO ACID
STRANDEDNESS: UNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC OPERATING SYSTEM:
                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENGTH:
                                                                                                                                                                                       10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10154
                                                                                                                                                                                                                                                      345 PARK AVENUE
                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              UNKNOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IBM PC COMPATIBLE
                                                                                                                                                                                                                                                                      MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FLOPPY DISK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              UNKNOWN
                                                                                                                                                                                                                                                                                                      PEPTIDES USEFUL FOR REDUCING SYMPTOMS OF TOXIC SHOCK SYMDROME 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 72; DB 3; 100.0%; Pred. No. 1.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2016-4010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

0

FILING DATE:

```
US-08-838-413A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-838-413A-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 10, Application US/08838413A Patent No. 6075119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 12; Conservative 0
                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/838,413A
FILING DATE: 07-APR-1997
CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION UMBER:
FILING DATE:
CLASSIFICATION S36
ATTORNEY/AGENT INFORMATION:
NAME: MORRY, MARY J. 34,398
REGISTRATION NUMBER: 34,398
REGISTRATION NUMBER: 30,3016,4010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                             REFERENCE/DOCKET NUMBER: 20
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)758-4800
TELEFAX: (212)751-6649
INFORMATION FOR SEQ ID NO: 10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (212)751-6849
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: PEPTIDES USEFUL FOR
TITLE OF INVENTION: REDUCING SYMPTOMS OF TOXIC SHOCK SYNDROME
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORGAN & FINNEGAN
STREET: 345 PARK AVENUE
CITY: NEW YORK
STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY DISK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: AMINO ACID
STRANDEDNESS: UNKNOWN
TOPOLOGY: UNKNOWN
MOLECULE TYPE: PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: MORRY, MARY J.
REGISTRATION NUMBER: 34,398
REGISTRATION NUMBER: 20:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION: TELEPHONE: (212)758-4800
                                                                               SEQUENCE CHARACTERISTICS:
TYPE: AMINO ACID STRANDEDNESS: UNKNOWN
                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: WORDPERFECT 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 CMYGGVTEHEGN 12
||||||||||||
1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH:
                                                           ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                      UNKNOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               UNKNOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2016-4010
                                                                                                                                                                               2016-4010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.4e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
; TYPE: AMINO ACID
; STRANDEDNESS: UNKNOWI
; TOPOLOGY: UNKNOWN
; MOLECULE TYPE: PEPTIDE
US-08-838-413A-11
                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                               RESULT 7
US-08-896-933-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-838-413A-11
Sequence 3, Application US/08896933 Patent No. 6221351
GENERRAL INFORMATION:
APPLICANT: Terman, David S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 11, Application US/08838413A Patent No. 6075119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 11; Conserv
                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (212)751-6849
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: MORRY MARY J.
REGISTRATION NUMBER: 34,398
REFERENCE/DOCKET NUMBER: 2016
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)758-4800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/08/
FILING DATE: 07-APR-1997
CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM: MEDIUM TYPE: FLOPPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: NEW YORK
STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: WORDPERFECT 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 10154
                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                            1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CMYGGVTEHNGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 CMYGGVTEHEGN 12
                                                                                                                               CMYGGITKHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FLOPPY DISK
                                                                                                                                                                                                                                                                                                                          UNKNOWN
                                                                                                                                                                                                         93.1%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PEPTIDES USEFUL FOR REDUCING SYMPTOMS OF TOXIC SHOCK SYNDROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/838,413A
                                                                                                                                                                                                                                                                                                                                                                                        11:
                                                                                                                                                                                          Score 67; DB 3;
Pred. No. 2.8e-05;
2; Mismatches (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 67; DB 3;
Pred. No. 2.8e-05;
0; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                        2016-4010
                                                                                                                                                                                                                        DB 3; Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                             0
```

```
; SEQ ID NO 5; LENGTH: 14; TYPE: PRT; ORGANISM: Staphylococcus aureas US-08-896-933-5
                                                                                                                                                                                                                                                                                                                   US-08-896-933-28
                                                                                                                                                                                                                                                                                                                                                                                                                                        QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-896-933-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; ORGANISM: Staphylococcus aureas US-08-896-933-3
NUMBER OF SEQ ID NOS: 34
SOFTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 28
LENGTH: 238
                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Terman, David S.
                                                                                                                                                                                                                                                                        Sequence 28, Application US/08896933 Patent No. 6221351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: TERMAN, DAVID S.
TITLE OF INVENTION: TUMOR KILLING EFFECTS OF ENTEROTOXINS,
TITLE OF INVENTION: SUPERANTIGENS, AND RELATED COMPOUNDS
FILE REFERENCE: 09629/005002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: FastSEQ for Windows Version 3.0 SEQ ID NO 3 LENGTH: 13 TYPE: PRT
                                                                         TITLE OF INVENTION: TUMOR KILLING EFFECTS OF ENTEROTOXINS, TITLE OF INVENTION: SUPERANTIGENS, AND RELATED COMPOUNDS FILE REFERENCE: 09629/005002
CURRENT APPLICATION NUMBER: US/08/896,933
CURRENT FILING DATE: 1997-07-18
EARLIER APPLICATION NUMBER: 08/252,978
EARLIER FILING DATE: 1994-06-02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 5, Application US/08896933 Patent No. 6221351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 11; Conservat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/08/896,933
CURRENT FILING DATE: 1997-07-18
EARLIER APPLICATION NUMBER: 08/252,978
EARLIER FILING DATE: 1994-06-02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: TUMOR KILLING EFFECTS OF ENTEROTOXINS, TITLE OF INVENTION: SUPERANTICENS, AND RELATED COMPOUNDS FILE REFERENCE: 90629/005002 CURRENT APPLICATION NUMBER: US/08/896,933 CURRENT FILING DATE: 1997-07-18 EARLIER APPLICATION NUMBER: 08/252,978 EARLIER APPLICATION NUMBER: 08/252,978 EARLIER FILING DATE: 1994-06-02 NUMBER OF SEO ID NOS: 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 34
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
les 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                   1 CMYGGITKHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                          1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CMYGGVTEHHGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 67;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 67; DB 4;
Pred. No. 3.2e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,:
```

```
QΥ
                                                                                                                            ; ORGANISM: Staphylococcus aureas US-08-896-933-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-896-933-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; ORGANISM: Staphylococcus aureas US-08-896-933-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-896-933-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; ORGANISM: Staphylococcus aureas US-08-896-933-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; SEQ ID NO 26
; LENGTH: 239
; TYPE: PRT
                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                Sequence 27, Application US/08896933 Patent No. 6221351 GENERAL INFORMATION:
                                                     Query Match
Best Local Similarity
                                                                                                                                                                              SEQ ID NO 27
LENGTH: 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 26, Application US/08896933 Patent No. 6221351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                               EARLIER APPLICATION NUMBER: 08/252,978
EARLIER FILING DATE: 1994-06-02
NUMBER OF SEQ ID NOS: 34
SOFTWARE: FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: TUMOR KILLING EFFECTS OF ENTEROTOXINS, TITLE OF INVENTION: SUPERANTIGENS, AND RELATED COMPOUNDS FILE REFERENCE: 09629/005002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Terman, David S.
TITLE OF INVENTION: TUMOR KILLING EFFECTS OF ENTEROTOXINS,
TITLE OF INVENTION: SUPERANTIGENS, AND RELATED COMPOUNDS
FILE REFERENCE: 09629/005002
CURRENT APPLICATION NUMBER: US/08/896,933
CURRENT FILING DATE: 1997-07-18
EARLIER APPLICATION NUMBER: 08/252,978
EARLIER APPLICATION NUMBER: 08/252,978
EARLIER FILING DATE: 1994-06-02
NUMBER OF SEQ ID NOS: 34
                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/08/896,933 CURRENT FILING DATE: 1997-07-18
                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Terman, David S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                               TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          113 CMYGGVTEHNGN 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  109 CMYGGITKHEGN 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
nes 10; Conserv
1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 CMYGGVTEHEGN 12
                                     10;
                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                   for Windows Version 3.0
                                                     93.1%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93.1%;
                                                     Score 67;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 67; DB 4;
Pred. No. 0.00061;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 67; DB 4; Le
Pred. No. 0.00061;
2; Mismatches 0;
                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                   0.00061;
                                                                        DB 4;
                                                                  Length 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 238;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 239
                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                   Ö,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

밁

110 CMYGGITKHEGN 121

```
US-08-580-806-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-446-918A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-446-918A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: PAtentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/446,918A
FILING DATE: 18-MX-1995
CLASSIFICATION: 552
ATTORNEY/AGENT INFORMATION:
NAME: KOVARTIK, JOSEPh E.
REGISTRATION NUMBER: 33,005
REFERENCE/DOCKET NUMBER: 2879-29
                                                                                                                                                                                                                                                                                                Sequence 2, Application US/08580806 Patent No. 5935568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application US/08446918A Patent No. 5705151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
LENGTH: 255 amino acids
                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Dow, Steve W.
APPLICANT: Elmslle, Robyn E.
TITLE OF INVENTION: GENE THERAPY FOR T CELL REGULATION
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
Charidan Ross & McIntosh
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                        APPLICANT: Dow, Steve W.
APPLICANT: Elmslie, Robyn E.
APPLICANT: Potter, Terence A.
TITLE OF INVENTION: GENE THERAPY FOR EFFECTOR CELL REGULATION
UNMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (303) 863-9700
TELEFAX: (303) 863-0223
                                                                                                                                                                                                                                                                                                                                                                                                                129 CMYGGVTEHNGN 140
                                                                                                CITY: Denver
STATE: Colora
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE: Sheridan Ross & McIntosh
STREET: 1700 Lincoln Street, Suite 3500
CITY: Denver
STATE: Colorado
                                                                           COUNTRY:
                                                                                                                                 STREET:
                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 80203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                           80203
                                                                                              Colorado
                                                                                                                               1700 Lincoln Street, Suite 3500
                                                                           U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                  Sheridan Ross & McIntosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ) 863-0223
) 863-0223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 67; DB 1;
Pred. No. 0.00065;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δã
                                                                                                                    US-08-896-933-20
                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                       US-08-896-933-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-896-933-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; MOLECULE TYPE: protein US-08-580-806-2
                                                       ; GENERAL INFORMATION:
                                                                            ; Sequence 20, Application US/08896933
; Patent No. 6221351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Terman, David S.
TITLE OF INVENTION: TUMOR KILLING EFFECTS OF ENTEROTOXINS,
TITLE OF INVENTION: SUBGRANTIGENS, AND RELATED COMPOUNDS
FILE REFERENCE: 09629/005002
CURRENT FILIG 19629/005002
CURRENT FILING DATE: 1997-07-18
EARLIER APPLICATION NUMBER: 08/252,978
EARLIER APPLICATION NUMBER: 08/252,978
EARLIER FILING DATE: 1994-06-02
NUMBER OF SEQ ID NOS: 34
SODTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 13
IFECTIVAL 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 13, Application US/08896933
Patent No. 6221351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 93.1%;
Best Local Similarity 91.7%;
Matches 11; Conservative
                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                               Matches
APPLICANT: Terman, David S.
TITLE OF INVENTION: TUMOR KILLING EFFECTS OF ENTEROTOXINS.
TITLE OF INVENTION: SUPERANTIGENS, AND RELATED COMPOUNDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (303) 863-02 TELEFAX: (303) 863-02 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                    FEATURE: OTHER INFORMATION: Consensus sequences derived from stapholycoccus OTHER INFORMATION: aureus and streptococcus pyogenes polypeptides
                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 255 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION: TELEPHONE: (303) 863-9700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA: APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      129 CMYGGVTEHNGN 140
                                                                                                                                                                                                                                                             Local Similarity
les 11; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER: 32, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OPERATING SYSTEM:
                                                                                                                                                                                         _
                                                                                                                                                                                                                         1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 CMYGGVTEHEGN 12
                                                                                                                                                                                       CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Connell, Gary J
                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3) but
, 863-0223
, NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                88.9%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  us/08/580,806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     32,020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2879-29-C1
                                                                                                                                                                                                                                                                               Score 64; Depred No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 67; DB 2;
Pred. No. 0.00065;
0; Mismatches
                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                               DB 4; Length 14; 0.0001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
   protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query
Match
 BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-335-581A-3
72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     219241 seqs, 76174552 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     January 2, 2002, 20:36:20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DΒ
ENSAB6
ENSAB6
ENSAB6
AS11885
A26158
A261789
S18789
S18789
S18789
A33953
A28684
A28684
A2867
A28684
A2867
A28684
A2867
A28684
A2867
A28686
A28686
A28686
A28686
A28686
A28686
A28686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.5
Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Search time 56.72 Seconds (without alignments)
16.116 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      219241
                                                                                     exotoxin type A prexotoxin type A prexotoxin type A prexotoxin type A prenterotoxin D precenterotoxin E precenterotoxin E precenterotoxin E precenterotoxin E precently the choriolytic high choriolytic hypothetical protehypothetical protein A hypothetical proterereciver-like protein A hypothetical protein E protein 
                transmembrane prot
hypothetical prote
hypothetical prote
hypothetical prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                enterotoxin B prec
enterotoxin C-1 pr
enterotoxin C-2 pr
enterotoxin C3 - S
                                                                                                                                                                                                                                                                                                                                                                                                                 streptococcal pyro exotoxin A precurs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
conserved hypothet
```

TTTCCC>>>>>ERAP>>>	SANA HERANA HE	RESULENSAB ENSAB ENTER C; Spe C; Dat- C; Acc C; Acc C; Acc C; Acc C; Acc A; Fit A; Fit A; Res A; Cro A; Cro A; Res A; Tit A; Tit A; Ref A; Res A; Res		
Blochemistry 4, 1011-1016, 196 A;Title: Purification of staph A;Reference number: A90548; MU A;Contents: annotation; biolog R;Alakhov, V.Y.; Klinsky, E.Y. Eur. J. Biochem. 209, 823-828, A;Title: Identification of fun A;Reference number: S27240; MU A;Accession: S27240 A;Molecula type: protein A;Residues: 28-42;128-148 <ala;superfamily: #st<="" b="" bonds:="" c;keywords:="" disulfide="" domain:="" enterotoxin="" enterotoxin;="" extra="" f;1-27="" f;120-140="" f;28-266="" product:="" sequence="" signal="" td=""><td>A;Experimental source: strain: R;Huang, I.Y.; Bergdoll, M.S. J. Biol. Chem. 245, 3511-3517, A;Title: The primary structure A;Reference number: A92064; MU A;Contents: annotation; chymot: R;Huang, I.Y.; Bergdoll, M.S. J. Biol. Chem. 245, 3493-3510, J. Biol. Chem. 245, 3493-3510, A;Contents: annotation; tryption A;Contents: annotation; tryption A;Contents: annotation; tryption A;Contents: Application; tryption A;C</td><td>RESULT 1 ENSAB6 enterotoxin B precursor - Staple () Species: Staphylococcus aured () Species: Staphylococcus aured () Species: Staphylococcus aured () Species: Staphylococcus aured () Species: Staphylococcus () Appel 4 # sequence () Accession: S27360; Appel 5 A</td><td></td><td>33333333333333333333333333333333333333</td></ala;superfamily:>	A;Experimental source: strain: R;Huang, I.Y.; Bergdoll, M.S. J. Biol. Chem. 245, 3511-3517, A;Title: The primary structure A;Reference number: A92064; MU A;Contents: annotation; chymot: R;Huang, I.Y.; Bergdoll, M.S. J. Biol. Chem. 245, 3493-3510, J. Biol. Chem. 245, 3493-3510, A;Contents: annotation; tryption A;Contents: annotation; tryption A;Contents: annotation; tryption A;Contents: Application; tryption A;C	RESULT 1 ENSAB6 enterotoxin B precursor - Staple () Species: Staphylococcus aured () Species: Staphylococcus aured () Species: Staphylococcus aured () Species: Staphylococcus aured () Species: Staphylococcus () Appel 4 # sequence () Accession: S27360; Appel 5 A		33333333333333333333333333333333333333
istry 4, 1011-1016, 1965 ence number: A90548; MUID:66035792 nts: annotation; biological source by, V.Y.; Klinsky, E.Y.; Kolosov, Biochem. 209, 823-828, 1992 Identification of functionally a ance number: \$27240; MUID:93049338 sion: \$27240 Lie type: protein les: 28-42;128-148 <ala> amily: enterotoxin; extracellular pr bomain: signal sequence #status pr yProduct: enterotoxin B #status experi</ala>	tcal source: Y; Bergdoll am. 245, 351 e primary st number: A92 annotation; Y; Bergdoll em. 245, 349 em. 245, 349 en. 245, 349 en. 245, 349 en. Reessl	oxin B precursor - Staples: Staphylococcus auree es: Staphylococcus auree 24-Apr-1984 #sequence_2; sion: \$27360; A92065; S. y.C.L.; Khan, S.A. y.C.L.; Man, S.A. y.		4 4 4 4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6
, 1011-1014 fication of mater: A9055 motation; I.; Klinsky; Klinsky mater: 209, 82: microfication of mater: S2724 27240 g: protein e: protein enterotoxin; signal sect: enterot	Bergdoll, 245, 35111 245, 35111 rimary strumber: A9200 mober: A9200 motation; Gergdoll, Bergdoll, Bergdoll, Bergdoll, Bergdoll, Bergdoll, Bergdoll, Bergdoll, Bergdoll, Bergdoll, Bergdoll, Bergdoll, Bergdoll, Bergdoll, Bergdoll,	precursor phylococcu 1984 #seq 27360; A92 K6, 29-33 166, 29-33 27360 266 <jon 265="" 266="" <="" <jon="" jon="" li=""></jon>		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1011-1016, tcation of striber: A90548; obtation; bio; Kilnsky, E, Kilnsky, E, C, 209, 823-8 ification of bber: S77240; Frotein 42;128-148 < enterotoxin; enterotoxin sequent: ent	doll, M.S. 3511-3517, 3511-3517, 3511-3517, y structure A92064; MU ion; chymot doll, M.S. 3493-3510, y structure A92063; MU ion; trypti	recursor - Stap hylococcus and 1984 #sequence 1984 #sequence 7360; A92065; S Khan, S.A. 66, 29-33, 1986 tide sequence o ber: S27360; MU 7360 : DNA 66 <jon ces: EMBL:M1111 source: strain Bergdoll, M.S. 245, 3518-3525; Embry structure ber: A92065; MU 55, NND', 59-68,</jon 		ن
1011-1016, 1965 cation of staphylococca ber: A90548; MUID:66035 otation; biological sou ; Kilnsky, E.Y.; Koloso . 209, 823-828, 1992 fication of functionall: ber: S27240; MUID:93049 7240 : protein 42;128-148 <ala> enterotoxin B erotoxin, extracellular signal sequence #status t: enterotoxin B #status t: enterotoxin B #status</ala>	strain S-6 M.S. 1-3517, 1970 1-3517, 1970 1064; MUID:710 1064; MUID:710 1064; MID:710 1063; MID:710 13-3510, 1970	Staphy acarea encere 65; S27 1986 ince of ince		789 877 324 384 384 384 422 422 422 422 422 422 423 424 424 42
ylo ind: ica ica ica ica ind:	S-6 1970 of sind:71: ID:71: I970 of sind:71: ID:71: C pep	taphyloccurrents; S27240, S272400, S27240, S27240, S27240, S27240, S27240, S27240, S27240, S272400, S2724000, S272400, S272400, S272400, S272400, S272400, S272400, S2724000, S272400, S272400, S272400, S272400, S272400, S272400, S2724000, S2724000, S2724000, S2724000, S2724000, S2724000, S2724000, S27240000, S27240000, S27240000, S272400000000000000000000000000000000000		
lococcal D:6603579 Cal sourc Kolosov, 1992 Tionally D:9304933 D:9304933	ain S-6 SI7, 1970 ture of staphyl ymotryptic pept SI0, 1970 ture of staphyl ture of staphyl ture of staphyl HUID:71007900 yptic peptides W.G.; Wagman,	taphylococcus ureus ce_revision 1 ; S27240; A01 986 e of the ente MUID:8616802 1118; NID:915 in S6 5; 1970 ure of staphy MUID:7100790	ΑL	A82166 740622 \$65057 T126790 T12423 F75151 F
l ente 792 792 v, M.I y acti 338 338 prote prote predis	G & C	ococcus aureus ision 15-Oct-1 40; A01815 he enterotoxin 86188029 NID:g152999; P 70 staphylococca 71007902	ALIGNMENTS	
rot pr .; ve ve ve tal	coccal	t, cc xi	NTS	
rotein Maurer-Fo fragments fragments ; toxin ed <sig> mental <ma< td=""><td>H</td><td>m H M</td><td></td><td></td></ma<></sig>	H	m H M		
iai Iai	rot rot	% #text_cha gene from N:AAA88550.		
S H	oxin B. oxin B. Dunnery,	7 1 S		conse trans alpha hypot hypot hypot hypot hypot hypot finge phosp phosp phosp hypot regul
.; Mo ∑aphy	3. II. 3. I.	nge 18- staphyl ;; PID:	,	conserved h translation alpha-gluco hypothetica phosomal p finger prot phosphopyru phosphopyru phosphopyru hypothetica cregulator o numb-bindin
.; Moskaleva, taphylococcal	> ⊢	Jun- occo		conserved hypoth translation elon alpha-glucosidas hypothetical pro ribosomal protein finger protein finger protein z phosphopyruvate phosphopyruvate hypothetical pro regulator of pre numb-binding pro
	Isolation, solation,	.1999 ccus aur		conserved hypothet translation elonga alpha-glucosidase hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical protein consider a protein bosomal protein 2NF phosphopyruvate hypothetical prote phosphopyruvate hypothetical protein 2NF phosphopyruvate hypothetical prote protein 2NF phosphopyruvate hypothetical prote mumb-binding prote
E.Y.; enter	i	ge eu		THE PARTY OF THE P
E.Y.; Sves enterotoxi	composicomposi	s. s. bro		

```
R;Schmidt, J.J.; Spero, L.

J. Biol. Chem. 258, 6300-6306, 1983
A;Title: The complete amino acid sequence of Staphylococcal ente
A;Reference number: A01816; MUID:83213327
A;Accession: A01816
A;Molecule type: protein
A;Residues: 28-75, 'IL',78-176, 'N',178-266 <SCH>
C;Genetics:
A;Gene: entC1
C;Superfamily: enterotoxin
F;1-27/Domain: signal sequence #status predicted <SIG>F;28-266/Product: enterotoxin C-1 #status experimental <MAT>F;120-137/Disulfide bonds: #status experimental
                                                                                                                                                                                                                                                                enterotoxin C-2 precursor - Staphylococcus aureus N;Alternate names: enterotoxin C-3 precursor C;Species: Staphylococcus aureus C;Date: 10-Nov-1992 #sequence_revision 10-Nov-1992 #C;Accession: A60114; B60114; A33866 R;Bohach, G.A.; Schlievert, P.M. Infect. Immun. 57, 2249-2252, 1989 A;Title: Conservation of the biologically active por A;Reference number: A60114; MUID:89277549 A;Accession: A60114
                                      R;Couch, J.L.; Betley, M.J.
J. Bacteriol. 171, 4507-4510, 1989
A;Title: Nucleotide sequence of the type C-3 staphylococcal enterotoxin gene suggests A;Reference number: A33866; MUID:89327174
A;Accession: A33866
A;Status: preliminary A;Molecule type: DNA
                                                                                                                                          A; Molecule type: protein A; Residues: 28-66 < BOH2>
                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-266 <BOH>
A; Accession: B60114
                                                                                                                                                                                                                                         A;Status: not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Title: Nucleotide sequence of the staphylococcal enterotoxin C1 A;Reference number: S06356; MUID:88038352
A;Moleonia A....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Species: Staphylococcus aureus
C;Date: 15-Nov-1984 #sequence_revision 05-Jan-1996 #text_change 18-Jun-1999
C;Accession: S06356; A01816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: EMBL:X05815; NID:g46566; PIDN:CAA29260.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
A; Residues: 1-266 <BOH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 83.: nes 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  140 CMYGGVTEHNGN 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CMYGGITKHEGN 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C-1 precursor - Staphylococcus aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 91.7
11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 acid sequence of Staphylococcal enterotoxin
MUID:83213327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 67; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 67; DB 1;
Pred. No. 0.00017;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                         10-Nov-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .00017
                                                                                                                                                                                                                                                                                                       portions
                                                                                                                                                                                                                                                                                                                                                                                     #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                 of staphylococcal enterotoxins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PID:g46567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene and relatedness
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                         £
```

```
C; Accession: A26132
R; Johnson, L.P.; L'Italien, J.J.; Schlievert, P.M.
MOI. Gen. Genet. 203, 354-356, 1986
A; Title: Streptococcal pyrogenic exotoxin type A (scarlet fever toxin) is A; Reference number: A26152; MUID:86284313
A; Accession: A26152; MUID:86284313
A; Accession: A26152
A; Molecule type: DIA
A; Residues: 1-250 < JOH
C; Superfamily: enterotoxin B
C; Keywords: exotoxin
 Д
                                Qy
                                                                                                                                                                                                                                                                                                                                                       streptococcal pyrogenic exotoxin type A precursor - Streptococcus N;Alternate names: scarlet fever toxin; SPE type A (speA) C;Species: Streptococcus sp.
                                                                                                                                                                                                                                                                                                                                        C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Accession: S11885

R;Hovde, C.J.; Hackett, S.P.; Bohach, G.A.

Mol. Gen. Genet. 220, 329-333, 1990

A;Title: Nucleotide sequence of the staphylococcal enterotoxin C3 gene: sequence comp A;Reference number: S11885; MUID:90220508

A;Accession: S11885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          enterotoxin C3 - Staphylococcus aureus
C;Species: Staphylococcus aureus
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
S11885
                                                                                                                                                                                                                                                                                                                                                                                                                        A26152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB:X51661; NID:g46570; PIDN:CAA35972.1; PID:g46571 C;Superfamily: enterotoxin B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Residues: 1-266 <COU>
A;Cross references: GB:M28364; NID:g153003; PIDN:AAA26624.1; C;GenetLos:
C;GenetLos:
A;Gene: entC2
C;Superfamily: enterotoxin B
F;1-27/Domain: signal sequence #status predicted <SIG>F;28-266/Product: enterotoxin C-2 #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-266 <HOV>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                        Matches
                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          137 CMYGGITKHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               137 CMYGGITKHEGN 148
                                  1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 CMYGGVTEHEGN
CLYGGVTNHEGN 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 83.3
10; Conservative
                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12
                                                                                       88.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93.1%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          e #status predicted <SIG>
C-2 #status predicted <MAT>
                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 67; DB
Pred. No. 0.00
2; Mismatches
                                                                  Score 64; DB 1;
Pred. No. 0.00054;
1; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 67;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2;
. 0.00017;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2;
.00017;
                                                                                                                                                                                                                                                                                                                                      #text_change 10-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                    Length 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PID:g153004
                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                    related
                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
C; Species: Streptococcus pyogenes
A; Variety: strain MGAS262 isolate California
C; Date: 29-Jan-1993 #sequence_revision: Siazon
                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-236 <NEA>
A; Residues: 1-236 <NEA>
A; Residues: 1-236 <NEA>
A; Cross-references: EMBL:X61562; NID:g47299; PIDN:CAA43760.1; PID:g47300
A; Experimental source: strain MGAS251 isolate California unassignd phage
A; Note: the nucleotide sequence was submitted to the EMBL Data Library, the A; Accession: S18788
A; Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             exotoxin type A precursor (allele 2) - Streptococcus pyogenes phage (strain MGAS2 N;Alternate names: scarlet fever toxin c;Species: Streptococcus pyogenes phage A;Variety: strain MGAS250 isolate California; strain MGAS251 isolate California; lsolate United Kingdom; strain MGAS496 isolate Germany C;Date: 29-Jan-1993 #sequence_revision 29-Jan-1993 #text_change 16-Jul-1999 C;Accession: S18786; S187978; S18790; S18799; S18799; R;Nelson; K; Schlievert, P.M.; Selander, R.K.; Musser, J.M. J. Exp. Med. 174, 1271-1274, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R; Nelson,
J. Exp. Me
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Title: Characterization and clonal distribution of four alleles A;Reference number: S18782; MUID:92044323 A;Accession: S18789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
A; Residues: 1-236 < NEL>
A; Residues: 1-236 < NEL>
A; Cross-references: EMBL: X61573; NID: 947303; PIDN: CAA43771.1; PID: 947304
A; Cross-references: EMBL: X61573; NID: 947304
CAA43771.1; PID: 947304
                                      A; Molecule type: DNA
A; Residues: 1-236 <N
                                                                                                                          A;Status: nucleic
                                                                                                                                                            A; Accession: S18790
                                                                                                                                                                                              A; Note: the nucleotide sequence
                                                                                                                                                                                                                                        A; Molecule type; DNA
A; Residues: 1-236 <NEZ>
A; Cross-references: EMBL: X61563; NID: g47301; PIDN: CAA43761.1; PID: g47302
A; Experimental source: strain MGAS256 isolate California unassigned phage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A:Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Note: the nucleotide sequence was submitted A; Accession: $18787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: EMBL:X61561; NID:g47297; PIDN:CAA43759.1; PID:g47298
A;Experimental source: strain MGAS250 isolate California unassigned phage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Status: nucleic acid sequence not shown; translation not shown A;Molecule type: DNA A;Residues: 1-236 <NEL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Reference number: S18782; MUID:92044323 A; Accession: S18786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Title: Characterization and clonal distribution of four alleles of the speA gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Status: nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;Superfamily: enterotoxin ;Keywords: exotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; 23-236/Product:
Cross-references: EMBL:X61564;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1-22/Domain: signal sequence (fragment) #status predicted <SIG>23-236/Product: exotoxin A (fragment) #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         on, K.; Schlievert, P.N
Med. 174, 1271-1274,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity es 10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-Jan-1993 #sequence_revision 29-Jan-1993 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CIYGGVTNHEGN 131
                                      -236 <NEY>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Schlievert, P.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                  acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       87.5%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1991
                                                                                                                      not
                                                                                                                                                                                                      BBM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             not shown; translation not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Selander, R.K.; Musser, J.M.
NID:g47305; PIDN:CAA43762.1; PID:g47306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Streptococcus pyogenes (strain MGAS262 isolate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 63; DB 2;
Pred. No. 0.00078;
                                                                                                                      shown;
                                                                                                                                                                                                      submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                      translation
                                                                                                                                                                                                  California unassigned
to the EMBL Data Libra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the EMBL Data Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 236;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                      not
                                                                                                                                                                                                  Data Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       e
£
                                                                                                                                                                                                                                    phage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the speA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       September
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    September
                                                                                                                                                                                                      September
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         September
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MGAS250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Califor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        strain
                                                                                                                                                                                                      1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           encod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            encoc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρ
```

```
C;Keywords: exotoxin
F;1-22/Domain: signal sequence (
F;23-236/Product: exotoxin type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A:Cross-references: EMBL:X61566; NID:g47317; PIDN:CAA43764.1; PID:g47318 A:Experimental source: strain MGAS492 isolate United Kingdom unassigned parameter in the nucleotide sequence was submitted to the EMBL Data Library, A:Accession: S18799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Experimental source: strain MGAS285 isolate Colorado unassigned phage A; Note: the nucleotide sequence was submitted to the EMBL Data Library, A; Accession: S18792
                                                                                                                                                                A;Cross-references: EMBL:x61569; NID:g47313; PIDN:CAA43767.1; PID:g47314 A;Experimental source: strain MGAS485 isolate Yugoslavia unassigned phage A;Note: the nucleotide sequence was submitted to the EMBL Data Library, A;Accession: S18794
                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: EMBL:X61568; NID:947289; PIDN:CAA43766.1; PID:947290 A;Experimental source: strain MGAS158 isolate Nebraska unassigned phage A;Note: the nucleotide sequence was submitted to the EMBL Data Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Title: Characterization and clonal distribution of four alleles A; Reference number: S18782; MUID:92044323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Species: Streptococcus pyogenes phage A;Variety: strain MGAS158 isolate Nebraska; strain MGAS485 isolate C;Date: 29-Jan-1993 #sequence_revision 29-Jan-1993 #text_change C;Accession: S18783; S18793; S18794; S18801; S18798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     exotoxin type A precursor (allele 3) - Streptococcus pyogenes phage (strain N;Alternate names: scarlet fever toxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: EMBL:X61567; NID:g47325; PIDN:CAA43765.1; PID:g47326
A;Experimental source: strain MGAS496 isolate Germany unassigned phage
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: EMBL:X61565; NID:g47311; PIDN:CAA43763.1; PID:g47312
A;Experimental source: strain MGAS480 isolate Yugoslavia unassigned phag
A;Note: the nucleotide sequence was submitted to the EMBL Data Library,
A;Cross-references: EMBL:X61570; NID:g47315; PIDN:CAA43768.1; PID:g47316 A;Experimental source: strain MGAS491 isolate United Kingdom unassigned A;Note: the nucleotide sequence was submitted to the EMBL Data Library,
                                                                                    A; Molecule type: DNA
A; Residues: 1-236 <NEZ>
                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-236 <NEA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-236 <NEL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Reference number: A; Accession: S18783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Superfamily: enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: nucleic acid sequence not shown; translation not shown A;Molecule type: DNA A;Residues: 1-236 <NES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-236 <NEH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Accession: S18795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Residues: 1-236 <NEO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: nucleic
                                                                                                                                           A; Status: nucleic
                                                                                                                                                                                                                                                                                                                                      A; Status: nucleic acid sequence not shown; translation
                                                                                                                                                                                                                                                                                                                                                             A; Accession: S18793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R; Nelson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Gene: speA2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Exp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  n, K.; Schlievert, P.M.; Selander, med. 174, 1271-1274, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CIYGGYTNHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CMYGGVTEHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acid sequence not shown; translation
                                                                                                                                        acid sequence not shown;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acid sequence not shown;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    87.5%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (fragment) #status
A (fragment) #stat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 63; DB 2;
Pred. No. 0.00078;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R.K.; Musser, J.M.
                                                                                                                                        translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tatus predicted 
#status predict
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         not shown
                                                                                                                                        not
                                                                                                                                                                                                                                                                                                                                         not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                        shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         isolate Yugoslavia; strain
hange 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             phage
                                                                                                                                                                                                                          phage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      September 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                September 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                September 199
                                                                                                                                                                                                September
                                                                                                                                                                                                                                                                                                                                                                                                September
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pnage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       speA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MGAS158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                                                   199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          œn
```

September 199

```
A;Gene: speA3
C;Superfamily: entero:
C;Keywords: exotoxin
F;1-22/Domain: signal
F;23-236/Product: exot
                                                   A;Cross-references: EMBL:x61559; NID:g47293; PIDN:CAA43757.1; PID:g47294
A;Experimental source: Streptococcus pyogenes strain MGAS167 isolate Texas
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, Sep
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:U40453; EMBL:M19350; NID:g1877426; PIDN:AAC48868.1; PID:g1877430 R;Nelson, K.; Schlievert, P.M.; Selander, R.K.; Musser, J.M.
J. Exp. Med. 174, 1271-1274, 1991
A;Title: Characterization and clonal distribution of four alleles of the speA gene encoca;Reference number: S18782; MUID:92044323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NyAlternate names: erythrogenic toxin; scarlet rever toxin (5.5pecies: Streptococcus pyogenes phage T12 C.Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999 C:Accession: S29659; S18782; S18784; S18785; S18791; S18796; S18797; S18800 R.Weeks, C.R.; Ferretti, J.J. 1986
Infect. Immun. 52, 144-150, 1986
                                                                                                                                                                                                                                                        A;Cross-references: EMBL:X61556; NID:g47291; PIDN:CAA43754.1; PID:g47292
A;Experimental source: Streptococcus pyogenes strain MGAS165 isolate Minnesota unassigne
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL:X61560; NID:g47287; PIDN:CAA43758.1; PID:g47288
A;Experimental source: Streptococcus pyogenes strain MGAS156 isolate Nebraska unassigned A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 1991
         A;Status: nucleic acid sequence
                                          A; Accession: S18791
                                                                                                                                                    A; Molecule type: DNA
A; Residues: 9-244 <NEZ>
                                                                                                                                                                                                              A;Status: nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 9-244 <NEA>
                                                                                                                                                                                                                                                                                                                                                                                                                      A;Status: nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Note: the nucleotide sequence A; Accession: S18784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 9-244 <NEL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Reference number: S18782; A; Accession: S18782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-251 <WEE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Title: Nucleotide sequence of the type A streptococcal exotoxin A;Reference number: S29659; MUID:86166804
A;Accession: S29659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-236 <NEO>
A; Cross-references: EMBL:X61571; NID:g47323; PIDN:CAA43769.1; PID:g47324
A; Cross-references: EMBL:X61571; NID:g47323; PIDN:CAA43769.1; PID:g47324
A; Experimental source: strain MGAS495 isolate Germany unassigned phage
A; Note: the nucleotide sequence was submitted to the EMBL Data Library,
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           exotoxin type A precursor (allele 1) - Streptococcus pyogenes phage N-Alternate names: erythrogenic toxin; scarlet fever toxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:X61572; NID:g47333; PIDN:CAA43770.1; PID:g47334
A;Experimental source: strain MGAS624 isolate Germany unassigned phage
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Accession: S18798
A;Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-236 <NEY>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Accession: S18801
A; Status: nucleic a
                                                                                                                                                                                                                                               ;Accession: S18785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1-22/Domain: signal sequence (fragment) #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CIYGGVTNHEGN 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                   acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          87.5%;
83.3%;
         not shown;
                                                                                                                                                                                                           not shown; translation not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       No.
   translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
0.00078;
1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 236;
   not shown
                                                                                                                                                                                                           shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (erythrogenic toxin)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                            September
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           September 1991
                                                            unassigned
ptember 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                 ַפַי
                        RESULT
A28664
                                                                                                                                                                                                  Ωy
enterotoxin
                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
```

131

CTYGGVTPHEGN

142

11

×

precursor

Staphylococcus aureus

```
A;Cross-references: GB:M28521; C;Superfamily: enterotoxin B
                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-258 <BAY>
                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Title: Genetic and molecular analyses of A; Reference number: A33953; MUID: 89359112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Accession: A33953 R; Bayles, K.W.; Iano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      enterotoxin D precursor - Staphy C; Species: Staphylococcus aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Molecule type: DNA
A;Residues: 9-244 <NEY>
A;Residues: 9-244 <NEY>
A;Residues: 9-244 <NEY>
A;Cross-references: EMBL:x61555; NID:g47309; PIDN:CAA43753.1; PID:g47310
A;Cross-references: EMBL:x61555; NID:g47309; PIDN:CAA43753.1; PID:g47310
A;Cross-references: EMBL:x61555; NID:g47309; PIDN:CAA43753.1; PID:g47310
A;Experimental source: Streptococcus pyogenes strain MGAS327 isolate Arizona unassign
A;Mote: the nucleotide sequence was submitted to the EMBL Data Library, September 199
A;Status: nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Mole
                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Reference number: A33953;
A; Accession: A33953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    J. Bacteriol. 171, 4799-4806, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Date: 09-Mar-1990 #sequence_revision 09-Mar-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Gene: speA; speAl C;Superfamily: enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL:X61554; NID:g47327; PIDN:CAA43752.1; PID:g47328 A;Experimental source: Streptococcus pyogenes strain MGAS500 isolate New A;Note: the nucleotide sequence was submitted to the EMBL Data Library, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F;1-30/Domain: signal sequence #status predicted <SIG> F;31-251/Product: exotoxin type A #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Keywords: exotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 9-228 <NES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: EMBL:X61558; NID:g47321; PIDN:CAA43756.1; PID:g47322 A;Experimental source: Streptococcus pyogenes strain MGAS494 isolate France A;Note: the nucleotide sequence was submitted to the EMBL Data Library, Sept A;Accession: S18800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
A; Residues: 9-244 < NEH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL:X61557; NID:g47319; PIDN:CAA43755.1; PID:g47320
A;Experimental source: Streptococcus pyogenes strain MCAS493 isolate France unassigne
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 199
A;Accession: S18797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Status: nucleic acid sequence not shown;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Status: nucleic acid sequence not shown; translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Residues: 9-244 <NEO>
                                                                           Matches
                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         128 CIYGGVTNHEGN 139
1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CMYGGVTEHEGN
                                                                       l Similarity
10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Iandolo,
                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J.J.
                                                                                                           83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               87.5%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Staphylococcus
                                                                                                                                                                                                                                                                                                     NID:g1492109; PIDN:AAB06195.1; PID:g758691
                                                                   0
                                                                                                           Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 63; DB 1;
Pred. No. 0.00083;
                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                           NO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               translation
                                                                                                           0
                                                                                                           DB 2;
0.0029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #text_change 15-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 251
                                                                                                                                          Length 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                encoding
                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                staphylococcal enterotox
                                                                   <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   September
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 September
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zealand unas
September 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unassigne
cember 199
                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
R:Couch, J.L.; Soltis, M.T.; Betley, M.J.
J. Bacteriol. 170, 2954-2960, 1988
A:Title: Cloning and nucleotide sequence of A:Reference number: A28179; MUID:88257005
A:Accession: A28179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-257 <BET>
A; Residues: 1-257 <BET>
A; Cross-references: GB:M18970; NID:g153120; PIDN:AAA26681.1; PID:g15
A; Experimental source: strain FRI337
R; Huang, I.Y.; Hughes, J.L.; Bergdoll, M.S.; Schantz, E.J.
J. Biol. Chem. 262, 7006-7013, 1987
A; Title: Complete amino acid sequence of staphylococcal enterotoxin
A; Reference number: A29566; MUID:87222293
A; Accession: A29566
                                                                                                                                                                     high choriolytic hatching proteinase (EC 3.4.24.-) HCE23 precursor - Japanese C:Species: Oryzias latipes (Japanese medaka) C:Date: 01-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Thes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     enterotoxin E precursor - Staphylococcus aureus C;Species: Staphylococcus aureus C;Date: 30-Jun-1989 #Sequence_revision 30-Jun-1989 C;Accession: A28179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C:Species: Staphylococcus aureus
C:Date: 30-Jun-1989 #sequence_revision 30-Jun-1989 #text_change 15-Oct-1999
C:Accession: A28664; A29566
R:Betley, M.J.; Mekalanos, J.J.
J. Bacteriol. 170, 34-41, 1988
                              A; Reference number: A48826; MUID:93012471
A; Accession: B48826
                                                                                                        R;Yasumasu, S.; Yamada, K.; Akasaka, K.; Mitsunaga, K.; Iuchi, I.; Shimada, H.; Yamagam
Dev. Biol. 153, 250–258, 1992
                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Molecule type: DNA
A;Residues: 1-257 <COUD
A;Cross-references: GB.M21319; NID:g153001; PIDN:AAA26617.1; PID:g153002
C;Superfamily: enterotoxin B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A:Map position: 6
C:Superfamily: enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein A; Residues: 25-241, 'S', 243-257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Title: Nucleotide sequence of the type A staphylococcal enterotoxin A;Reference number: A28664; MUID:88086892 A;Accession: A28664
A; Molecule type: mRNA; protein A; Residues: 1-270 < YAS>
                                                                                                                                                     C; Accession: B48826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                      130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           130 CMYGGVTLHDNN 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity hes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12
                                                                                                                                                                                                                                                                     13
                                                                                                                                                                                                                                                                                                                                                                              1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                      CMYGGVTLHDNN 141
                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 76.48;
75.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                               76.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <HUA>
                                                                                                                                                                                                                                                                                                                                                                                                                          1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 55; I
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 55; DB 2;
Pred. No. 0.023;
                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the type E staphylococcal enterotoxin gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
0.023;
                                                                                   constituent proteases of the hatching
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #text_change 15-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 257;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 257;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PID:g153121
                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
```

```
A;Cross-references: GB:M96170; NID:g213501; PIDN:AAA49438.1; PID:g213502
A;Experimental source: orange red variety, embryo
A;Note: sequence extracted from NCBI backbone (NCBIN:114769, NCBIP:114770)
A;Note: part of this sequence, including the amino end of the mature protein,
C;Superfamily: astacin; astacin homology
C;Keywords: glycoprotein; hydrolase; metalloproteinase; zinc
F;1-20/Domain: signal sequence *status predicted <SIG>F;21-70/Domain: propeptide *status predicted <PRO>F;21-70/Domain: propeptide *status predicted <PRO>F;71-270/Product: low choriolytic hatching proteinase *status predicted
F;189-270/Domain: astacin homology <AST>F:88-270/Domain: astacin homology <AST>F:91-25/Binding site: carbohydrate (Asn) (covalent) *status predicted
F;169,173,179,225/Binding site: zinc (His, His, His, Tyr) *status predicted
F;170/Active site: Glu *status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Superfamily: astacin; astacin homology
(Keywords: glycoprotein; hydrolase; metalloproteinase; zinc
(F;1-20/Domain: signal sequence #status predicted <SIG>
(F;21-79/Domain: propeptide #status predicted <PRO>
(F;80-279/Product: low choriolytic hatching proteinase #status predicted <MAT>
                                                                                                                                                                                                              hypothetical protein T25B9.2 - Caenorhabditis elegans C;Species: Caenorhabditis elegans C:Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #tC;Accession: T25259
                                                                                                                                                                                                                                                                                                                          RESULT
T25259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Title: Isolation of cDNAs for LCE and HCE, A;Reference number: A48826; MUID:93012471 A;Accession: C48826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Thehas 7; Conserve
                                                                                                                                submitted to the EMBL Data A; Reference number: 220006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
7; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F;62/Binding site: carbohydrate (Asn) (covalent) #status predicted F;178,182,188,234/Binding site: zinc (His, His, His, Tyr) #status F;179/Active site: Glu #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: mRNA
A; Residues: 1-279 < YAS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Yasumasu, S.; Yamada, K.; Akasaka, K.; Mitsunaga, K.; Iuchi, I.; Shimada, H.; Yamag
Dev. Biol. 153, 250-258, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Date: 08-Feb-1996 #sequence_revision 08-Feb-1996 #text_change 03-Dec-1999
C;Accession: C48826
A; Cross-references: EMBL: Z70311;
                      A; Molecule type: DNA
A; Residues: 1-366 <WIL>
                                                                       A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                    A; Reference number:
A; Accession: T25259
                                                                                                                                                                                          R; Matthews, P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     F;97-279/Domain: astacin homology <AST>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Cross-references: GB: M96171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Status: not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         high choriolytic hatching proteinase (EC 3.4.24.-) HCE21 precursor - Japanese C; Species: Oryzias latipes (Japanese medaka)
                                                                                                                                                                                                                                                                                                                                                                                                                                       170 CMYSGIIQHELN 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               161 CMYSGIIQHELN 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Oryzias latipes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                          #sequence_revision 15-Oct-1999 #text_change 31-Jan-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63.9%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63.9%;
58.3%;
                                                                                                                                                          Library, March 1996
PIDN:CAA94374.1; GSPDB:GN00022; CESP:T25B9.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ?;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 46; I
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     рв
(.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   constituent proteases of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tyr) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SBM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            medaka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      det
```

```
A; Experimental source: cione T25B9
C; Genetics:
A; Genet
```

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9::
   3320987654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
 36
36
36
36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq length: 0 seq length: 2000000000
                                                                                                      Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
 BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-335-581A-3
72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      January 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100059 segs, 36664827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2002, 20:46:45 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapext 0.5
ETC1_STAU
ETC2_STAU
ETC3_STAU
ETXB_STAAU
STRAY
ETXB_STAAU
ETXA_STAAU
ETXA_STAAU
ETXA_STAAU
HCE1_OYVLA
HCE2_OYVLA
HCE2_OYVLA
HCE2_OYVLA
HCE2_OYVLA
HCE2_OYVLA
HCE2_OYVLA
HCE2_OYVLA
HCE2_OYVLA
HCE2_OYVLA
HCE3_DECOLI
AGLU_HORVU
RS7_DESMO
237A_HUMAN
ERR1_YEAST
RE16_SCHPO
ASTL_COTJA
MCZR_CAVPO
ASTL_COTJA
MCZR_CAVPO
ASTL_COTJA
MCZR_CAVPO
ASTL_HUMAN
KER1_HUMAN
KER1_HUMAN
KER1_HUMAN
KER1_HOUSE
SRM_MOUSE
SRM_MOUSE
STAM_MOUSE
FIBB_CHICK
MOAE_HELPJ
YPZ4_METTF
YPV4_METTF
YPV4_METTF
YPV4_METTF
YPV4_METTF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Search time 37.4 Seconds (without alignments)
11.764 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P01553 staphylococ
P34071 staphylococ
P23313 staphylococ
P01552 staphylococ
043661
0436861
043763
P412062
P417032
P42662
                                                                                                                                                                                                                                                                                                                              P31580
P31581
P55815
P07910
P48459
                                                                                                                                                                                                                                                                                                                                                                                                            P08095
P20723
P13163
P12993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
7 saccharomyc
3 homo sapien
3 mus musculu
1 mus musculu
1 gallus gall
4 helicobacte
7 rattus norv
5 methanobact
5 methanobact
6 methanobact
6 saccharomyc
                                                                                                                                                                                                                                                                              3 staphylococ
3 staphylococ
0 oryzias lat
1 oryzias lat
5 bacillus ps
0 homo sapien
9 caenorhabdi
1 escherichia
3 hordeum vul
desulfuroco
                                                                                                                                                                                                                                                                                                                                                                                                                                          1 staphylococ
3 staphylococ
2 staphylococ
5 streptococc
3 staphylococ
                                                                                                                                                                                                             homo sapien
saccharomyc
schizosacch
coturnix co
                                                                                                                                                                                manduca sex
                                                                                                                                                                   mus musculu
                                  SO
```

SQ	X X X X X X X X X X X X X X X X X X X	RRRRRRR RR R	RES ETC ID AC AC DT DT	
EMB PIR PIR HSS Int Pfin PRI PRI PRI PRO CON CON SEQ	SEQUEN MEDLIN SCHMIC THE CALL	ENT Stal Bac Bac NCB [1] SEQ MED SEQ MED Boh	μq	00000000000000000000000000000000000000
R EMBL; X05815; CAA29260.1; R PIR; A01816; EMSAC1. R PIR; A01816; EMSAC1. R PIR; S06356: S06356. R HSSP, P34071; 1522. R InterPro; IPR001961; Staph_Strep_R InterPro; IPR001979; BACTRLTOXIN. R PROSITE; P500279; BACTRLTOXIN. R PROSITE; P500277; STAPH_STREP_TOX R PROSITE; P500278; STAPH_STREP_TOX R PROSITE; P500278; STAPH_STREP_TOX R Enterotoxin; Toxin; Signal; Super T SIGNAL 1 27 T CHAIN 28 266 T DISULFID 120 137 DISULFID 120 137 CONFLICT 177 177 CONFLICT 177 177 SEQUENCE 266 AA; 30546 MW; 3A	SEQUENCE OF 28-266. MEDLINE-83213327; Pu Schmidt J.J., Spero "The complete amino J. Biol. Chem. 258:6 -1- DISEASE: STAPHYLOCOCCAL F -1- SIMILARITY: THE PYROGENIC EXOTOX This SWISS-PROT entr between the Swiss I the European Bioinfo use by non-profit modified and this st entities requires a or send an email to	ENTCL Staphylococci Bacteria; Fi Bacillus/Sta NCBI_TaxID=1 [1] SEQUENCE FROM MEDLINE-8803 Bohach G.A., "Nucleotide: relatedness Mol. Gen. Gen.	1 AU 1_STAAU 553; JUL-1986 JAN-1990 JUL-1999 EROTOXIN	3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
5; CAA: ; ENSAC; SOG3: ; SOG3: ; SOG3: ; SOG3: ; SOG3: ; SOG3: ; TOX1: ; TOX1: ; TOX1: 1 28 28 120 177 177	28-266 13327; ., Spei che amit	us aumicurmicurmicurmicurmicurmicurmicurmicu	STA (Rel. (Rel. (Rel. TYPE C	50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0
19260.1 21. 66. 51: Sta 19. Strp 19. StrpH STAPH STAPH 137 137 137 137 137 137	8-266. 327; PubMed=61898 327; PubMed=61898 amino acid seque cocal FOOD POISON Y: THE DIFFERENT EXOTOXINS ARE AL EXOTOXINS ARE AL EXOTOXINS Institute o Bioinformatics In Bioinformatics In Bioinformatics In this statement is lires a license ag ail to license@is	us. S; Baccus ccus ccus because cus cus cus cus cus cus cus	NDARD; 01, Cr 13, La 38, La	775 841 842 908 918 1085 1328 1323 133224 1134 1138
ph some street of the street o	=618 seq 6306 CAL POIS ARE	Bacillus, cus group; cus group; omed=28230 art P.M.; of the st. pyrogenic :15-20(198	eated st se st an	
Strep_toxin. xin; 1. xin; 1. y. n. pp_Toxin_2; 1 sp_Toxin_2; 1 superantigen ENTEROTOXIN ENTEROTOXIN D -> N (IN D -> N (IN	ENCE OF 28-266. LINE-93213327; PubMed=6189824; LINE-93213327; PubMed=6189824; LOOMPLETE amino acid sequence of staph LOL Chem. 258:6300-6306(1983), DISEASE: STAPHYLOCOCCAL ENTEROTOXINS C. STAPHYLOCOCCAL FOOD POISONING SYNDROME SIMILARITY: THE DIFFERENT S. AUREUS ENT PYROGENIC EXOTOXINS ARE ALL RELATED. SWISS-PROT entry is copyright. It is een the Swiss Institute of Bioinformat European Bioinformatics Institute. The by non-profit institutions as long by non-profit institutions as long fied and this statement is not removed ties requires a license agreement (See end an email to license@isb-sib.ch).	us/Clostrid p; Staphylo 13067; s; staphylococusic toxins."	PRT; id) sequence innotation sor (SEC:	TNP3_MOUSE SECA_BACSU LIF2_TREPA CLC2_MOUSE SCRA_LIMPO AGRI_DISOM AGRI_DISOM AGRI_CHICK RBP2_HUMAN TIE1_HUMAN YP96_MYCTU ALIGNMEN
1. 1. en. en. TIN TYPE	ylococcal AUSE THE I EROTOXINS EROTOXINS produced t tics and tics and ere are no as its co Usage http://ww	hylococcus. hylococcus. ococcal enterotoxin	PRT; 266 AA. eated) st sequence update) st annotation update) CURSOR (SEC1).	· ·
•	OXIC OXIC OXIC OXIC OXIC OXIC OXIC OXIC	ı C1 gene	÷	Q60769 P28366 O83861 Q97391 Q25391 Q25390 P48820 Q90404 P31696 P497696 P497696 P35590 Q50625
	ATION PYOGENES Proclaboration a collaboration Trictions on its is in no way of for commercial sib.ch/announce/	ne and	·	mus musculu bacillus su treponema p mus musculu limulus pol pos taurus discopyge o gallus gall homo sapien mus musculu homo sapien mus musculu homo sapien

DB 1;

Length 266;

```
FEGULA PER PROPERTY OF THE PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                  DISULFID
METAL
METAL
                                                                                                                                                                                                                                                                PDB; 1STE; 23-DEC-96.
PDB; 1SE2; 08-MAR-96.
InterPro; IPR001961; Staph_Strep_toxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-FEB-1994 (Rel. )
01-FEB-1994 (Rel. )
15-JUL-1999 (Rel. )
ENTEROTOXIN TYPE C
    SEQUENCE
                            METAL
                                                                                                                                                            SIGNAL
                                                                                                                                                                          PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
Enterotoxin; Toxin; Signal; Superantigen;
                                                                                                                                                                                                                                                                                                                                                                                                                               dissimilarity.",

1. MO1. Biol. 269:270-280(1997).

1. DISEASE: STAPHYLOCOCCAL ENTEROTOXINS CAUSE THE INTOXICATION STAPHYLOCOCCAL FOOD POISONING SYNDROME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Schad E.M., Papageorgiou A.C., Svensson L.A., Acharya K.R., "A structural and functional comparison of staphylococcal enterotoxins A and C2 reveals remarkable similarity and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REPLAINE-96022987; PubMed-7552730; Swaminathan S., Furey W.F. Jr., Pletol "Residues defining V beta specificity enterotoxins.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ETC2_STAAU
P34071;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LT 2
_STAAU
                                                                                                                                                                                                                                                  Pfam; PF01123; Stap_Strp_toxin; PRINTS; PR00279; BACTRLTOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPARISON OF STRUCTURE OF SEA AND SEC2
MEDLINE=97334373; PubMed=9191070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nat. Struct. Biol. 2:680-686(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Staphylococcus aureus reveals Structure 3:769-779(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bohach G.A., Schlievert P.M.; "Conservation of the biologically active portions of staphylococcal enterotoxins Cl and C2.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium groBactllus/Staphylococcus group; Staphylococcus.
NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS).
MEDLINE=96027099; PubMed=7582894;
Papageorgiou A.C., Acharya K.R., Shapi:
Brehm R.D., Tranter H.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       X-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Crystal structure of the superantigen enterotoxin C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-89277549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENTC2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  137
                                                                                                                                                                                                                                                                                                                                                     SIMILARITY: THE DIFFERENT S.AUREUS ENTEROTOXINS AND S.PYOGENES PYROGENIC EXOTOXINS ARE ALL RELATED.
A60114; A60114.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CMYGGITKHEGN 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Immun. 57:2249-2252(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                       28
120
36
110
145
149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 28, Created)
. 28, Last sequence update)
. 38, Last annotation update)
C-2 PRECURSOR (SEC2).
                                        ; Signal;
27
266
137
137
110
145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed=2543637;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Acharya K.R., Shapiro R., Passalacqua E.F.,
    30604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AND SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93.1%;
    Ϋ́Ε.
                                             ZINC.
ZINC.
                                                                                                                                ENTEROTOXIN TYPE C-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 67;
Pred. No.
8407FB18536FAC08 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pletcher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            enterotoxin C2 from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6.9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J., Sax M.;
staphylococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                               Zinc; 3D-structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
PETSOLUTE
TO SEE THE PETSOLUTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
            Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                          DISULFID SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hovde C.J., Hackett S.P., Bohach G.A.;
Hovde C.J., Hackett S.P., Bohach G.A.;
"Nucleotide sequence of the staphylococcal enterotoxin C3 gene:
sequence comparison of all three type C staphylococcal
enterotxins.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1991
01-NOV-1991
15-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fields B.A., Malchiodi E.L., Li H., Ysern X., Stauf Schlievert P.M., Karjalainen K., Mariuzza R.A.; "Crystal structure of a T-cell receptor beta-chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacillus/Staphylococcus group; Staphylococcus.
                                                                                                                                                                                             SIGNAL
                                                                                                                                                                                                                                                                                      Pfam; PF01123; Stap_Strp_toxin; PRINTS; PR00279; BACTRLTOXIN.
                                                                                                                                                                                                                                                                                                                                                                               EMBL; X51661; CAA35972.1; -. PIR; S11885; S11885.
                                                                                                                                                                                                                                                                                                                                                                                                                                           entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ETC3_STAAU P23313;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STAAU
                                                                                                                                                                        CHAIN
                                                                                                                                                                                                                     Enterotoxin;
                                                                                                                                                                                                                                         PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                         InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
                                                                                                                                                                                                                                                                                                                                                              PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STAPHYLOCOCCAL FOOD POISONING SYNDROME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   superantigen."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -!- DISEASE: STAPHYLOCOCCAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 384:188-192(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=97064178; PubMed=8906797;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X-RAY CRYSTALLOGRAPHY (3.5 ANGSTROMS) OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENTC3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENTEROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 CMYGGVTEHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PYROGENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                                                                                                                                                                                       1JCK; 12-NOV-97.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gen. Genet. 220:329-333(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CMYGGITKHEGN 148
              10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                        28
120
266 1
            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Rel.
(Rel.
(Rel.
TYPE C
                                                                                                                                                                                           Toxin; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 20, Created)
. 20, Last sequence update)
. 38, Last annotation update)
C-3 PRECURSOR (SEC3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12
                                                                                                                        30671
                               93.1%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93.1%;
83.3%;
                                                                                                                            Œ,
         : Score 67; DB
: Pred. No. 6.9e
2; Mismatches
                                                                                                                                                                                                              Superantigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ENTEROTOXINS CAUSE THE INTOXICATION
                                                                                                                                                ВΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ?
                                                                                                                                                                   ENTEROTOXIN TYPE C-3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 67; DB 1;
Pred. No. 6.9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                        SIMILARITY.
SED8A32D11FFCA59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
DB 1;
6.9e-05;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPLEX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                                                                   3D-structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Stauffacher C.V.,
                                                    Length 266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WITH T-CELL RECEP
            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complexed with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for
         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   00
         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
```

Qy

밁

137

CMYGGITKHEGN 148

```
21-JUL-1986
13-AUG-1987
15-JUL-1999
ENTEROTOXIN 7
Papageorgiou A.C., Tranter H.S., Acharya K.R.;

"Crystal structure of microbial superantigen staphylococcal enterotoxin B at 1.5-A resolution: implications for superantigen recognition by MHC class II molecules and T-cell receptors.";

J. Mol. Biol. 277:61-79(1998).

-I- DISEASE: STAPHYLOCOCCAL ENTEROTOXINS CAUSE THE INTOXICATION STAPHYLOCOCCAL FOOD POISONING SYNDROME.

-I- SIMILARITY: THE DIFFERENT S.AUREUS ENTEROTOXINS AND S.PYOGEN PYROCENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                                                                                                                                            Jardetzky T.S., Brown J.H., Gorga J.C., Stern Chi Y.I., Stauffacher C., Strominger J.L., will "Three-dimensional structure of a human class molecule complexed with superantigen."; Nature 368:711-718(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-93063291; PubMed-1436058; Swaminathan S., Furrey W.F. Jr., Pletcher J., "Crystal structure of staphylococcal enteroto Nature 359:801-806(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 *Ranelli D.M., Jones C.L., Johns M.B., Mussey G.J., 
"Molecular cloning of staphylococcal enterotoxin B 
Escherichia coli and Staphylococcus aureus."; 
Proc. Natl. Acad. Sci. U.S.A. 82:5850-5854(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Staphylococcus aureus.
Bacteria; Firmicutes; Ba
Bacillus/Staphylococcus
NCBI_TaxID=1280;
                                                                                                                           X-RAY CRYSTALLOGRAPHY (1.5 ANGSTROMS).
MEDLINE-98181012; PubMed-9514739;
Papageorgiou A.C., Tranter H.S., Achar
                                                                                                                                                                                     "Three-dimensional structure of the complex between a T cell receptor beta chain and the superantigen staphylococcal enterotoxin B."; Immunity 9:807-816(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "The primary structure of staphylococcal cyanogen bromide peptides of reduced and B, and the complete amino acid sequence."
J. Biol. Chem. 245:3518-3525(1970).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 28-266 (S-6)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aureus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=86168029; PubMed=3957869
Jones C.L., Khan S.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STAAU
                                                                                                                                                                                                                                                                 X-RAY CRYSTALLOGRAPHY (2.4 ANGSTROMS) OF MEDLINE-99096298; PubMed-9881971;
                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-94203282; PubMed-8152483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=85298255; PubMed=3898073;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 40-91 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P01552;
                                                                                                                                                                                                                                   Li H., Llera A., Tsuchiya D., Leder L.,
Karjalainen K., Mariuzza R.A.;
                                                                                                                                                                                                                                                                                                                                                                                                      X-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS) OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-71007902;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Nucleotide sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ETXB_STAAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteriol. 166:29-33(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NE=71007902; PubMed=5470821; I.-Y., Bergdoll M.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Rel. 01, Created)
(Rel. 05, Last sequence up
(Rel. 38, Last annotation
TYPE B PRECURSOR (SEB).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of the enterotoxin B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacillus/Clostridium group; us group; Staphylococcus.
                                                                                                                                                                                                                                                                                                                                                                      Gorga J.C., Stern L.J., Urban R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  cher J., Sax M.;
enterotoxin B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                   Ysern X.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       enterotoxin B.
aminoethylated
                                                                                                                                                                                                                                                                                 COMPLEX WITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                       COMPLEX WITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                          Wiley
.ass II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from Staphylococcus
                                                                                                                                                                                                                                                                                                                                  D.C.;
histocompatibility
                                                                                                                                                                                                                                                   Schlievert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Khan
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ø
                                                                                                                                                                                                                                                                                 TCR
                                                                                                                                                                                                                                                                                                                                                                                                       MHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                  superantigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The enterotoxin
                    S. PYOGENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                       Η
                                                                                                                                                                                                                                                   P.M.,
```

```
RESULT 5
SPEA_STRPY
ID SPEA, STRPY
AC P08095;
DT 01-AUG-1988
DT 01-JAN-1990
DT 30-MAX-2000
DE EXOFOXIN TY
DE (SPEA A).
GN SPEA.
OS Streptococci
OC Streptococci
OX NCBI_TaxID=
RN [1]
RP SEQUENCE FR
RX MEDLINE=861
RA Weeks C.R.,
RT "Nucleotide
RT (erythrogen
RI Infect. Imm
RN [2]
RP SEQUENCE FR
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PDB; 2SEB; 28-JAN-98.

PDB; 3SEB; 27-MAY-98.

PDB; 1SE3; 16-JUN-97.

PDB; 1SE4; 15-OCT-97.

PDB; 1SBB; 04-MAR-99.

InterPro; IPRO01961; Staph_Strep_toxin.

Pfam; PF01123; Stap_Strp_toxin; 1.

PRINTS; PR00279; BACTRLTOXIN.
                                                                                                                                                                                                                       01-AUG-1988
01-JAN-1990
30-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIGNAL
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   use by non-profit institutions as young commercial modified and this statement is not removed. Usage by and for commercial modified and this statement is not removed. Usage by and for commercial modified and this statement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
                                                                            SEQUENCE FROM N.A. MEDLINE-86166804; Weeks C.R., Ferret
                                                                                                                                            Bacteria; Firmicutes; Streptococcus.
                                                                                                                                                                                                           EXOTOXIN TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
  SEQUENCE FROM N.A
                                                                                                                                                                      Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Enterotoxin; Toxin;
                                                   (erythrogenic
                                                                "Nucleotide
                                                                                                                              NCBI_TaxID=1314;
                                                                                                                                                                                                                                                                                                                                          140
                                                                                                                                                                                                                                                                                                                                                        1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1SEB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A01815; ENSAB6.
S27360; S27360.
                                                                                                                                                                                                                                                                                                                                          CMYGGVTEHNGN 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           M11118; AAA88550.1; -.
                                                 .R., Ferretti J.J.;
tide sequence of the type A streptococcal exotoxin
ogenic toxin) gene from Streptococcus pyogenes bac
                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                          Immun. 52:144-150(1986)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-JUN-96
                                                                                                                                                                                                         (Rel. 08, Created)
(Rel. 13, Last sequence update)
(Rel. 39, Last annotation update)
PE A PRECURSOR (SCARLET FEVER TOXIN) (ERYTHROGENIC TOXIN)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28
120
56
69
118
128
133
                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                      pyogenes.
                                                                                                                                                                                                                                                                           STANDARD;
                                                                                          PubMed=3514452;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        266
140
58
77
118
130
135
150
156
186
233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Signal;
                                                                                                                                                                                                                                                                                                                                                                                                       93.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             31436
                                                                                                                                                        Bacillus/Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                            MΨ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         NG -> GN (IN REF. 3).
Y -> YY (IN REF. 3).
QE -> EQ (IN REF. 3).
D -> N (IN REF. 3).
DN -> ND (IN REF. 3).
B6D417F61CF018B0 CRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Superantigen;
                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                       Score 67;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DIN -> NID (IN REF. 3).
QTD -> ENT (IN REF. 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DQFLYFDLI -> NEF
MISSING (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DDN -> NND (IN REF. DQFLYFDLI -> NEFFDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENTEROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                           251
                                                                                                                                                                                                                                                                                                                                                                                                       DB 1; 1
6.9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NEFFDLIYL
                                                                                                                                                        group;
                                                                                                                                                                                                                                                                                                                                                                                                                    Length 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                        Streptococcaceae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NI)
                                                    bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
RESULT 6
ETXD_STAAU
ID ETXD_S
AC P20723
DT 01-FEB
DT 01-FEB
                                                                                                                                                                                        밁
                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                          SOF THE THE THE TENT OF A REAL PROPERTY OF A REAL P
                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                            Matches
       ETXD_STAAU
P20723;
01-FEB-1991
01-FEB-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
DISULFID
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRINTS: PR00279; BACTRLTOXIN.

PRINTS: PR00279; BACTRLTOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X-RAY CRYSTALLOGRAPHY (2.57 ANGSTROMS).

MEDLINE-99094887; PubMed-9878045;

Papageorgiou A.C., Collins C.M., Gutman D.M., Kline J.B.,

O'Brien S.M., Tranter H.S., Acharya K.R.;

"Structural basis for the recognition of superantigen streptococcal pyrogenic exotoxin A (SpeAl) by MHC class II molecules and T-cell
                                                                                                                                                                                        128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE; PS00277; PROSITE; PS00278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; U40453; AAC48868.1; -. EMBL; X03929; CAA27568.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=86284313; PubMed=3526093;
Johnson L.P., L'Italien J.J., Schlievert P.M.;
"Streptococcal pyrogenic exotoxin type A (scarlet fever toxin) is related to Staphylococcus aureus enterotoxin B.";
                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       receptors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MISCELLANEOUS: THIS TOXIN SEEMS TO B SIMILARITY: THE DIFFERENT S.AUREUS E PYROGENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                   CIYGGVTNHEGN 139
                                                                                                                                                                                                                                CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISEASE: THE STREPTOCOCCAL PYROGENIC TOXINS A, B, AND C ARE THE CAUSATIVE AGENTS OF THE SYMPTOMS ASSOCIATED WITH SCARLET FEVER, HAVE BEEN ASSOCIATED WITH STREPTOCOCCAL TOXIC SHOCK-LIKE DISEASE AND MAY PLAY A ROLE IN THE EARLY EVENTS OF RHEUMATIC FEVER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A26152; A26152.
S29659; S29659.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through
een the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                               l Similarity
10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18:9-21(1999).
(Rel. 17, Created)
(Rel. 17, Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                          251 AA;
                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31
117
6
17
25
40
43
                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STAPH_STREP_TOXIN_1;
STAPH_STREP_TOXIN_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             203:354-356(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30
251
128
6
18
35
40
43
                                                                                                                                                                                                                                                                                                                                                                                                                                    129
178
                                                                                                                                                                                                                                                                                                                                                                                          29246
                                                                                                                                                                                                                                                                                               87.5%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                          WW.
                                                                                                                                                                                                                                                                        Pred. No. 0.0
l; Mismatches
                                                                                                                                                                                                                                                                                             Score 63; DB 1;
Pred. No. 0.00034;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    K -> E (IN REF. 2).
VT -> MK (IN REF. 2).
SQEVFAQQDPD -> LPKGICSTRPK (IN REF.
H -> Q (IN REF. 2).
S -> N (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                 TNKKMVTAQELDYK -> QIKNGNC REF. 2). 54001FE4CCCBFCC3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NLQNIYFLYEGDP -> REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                         I -> L (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EXOTOXIN TYPE A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E (IN REF. 2).
                                                                        258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE CODED BY E
                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                    22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TEKIYIFEMRVTL
                                                                                                                                                                                                                                                                                                                  Length 251
                                                                                                                                                                                                                                                                                                                                                                                                                             QIKNGNCSRISYT (IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BY BACTERIOPHAGE T12.
XINS AND S.PYOGENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (IN
                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           outstation
                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2).
                                                                                                                                                                                                                                                                   0;
```

```
RESULT 7
ETXA_STAAU
           AC DT DT DT DT DT
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                    VΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE STATES AND DESCRIPTION OF SOURCE SOUR
                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 10
                                                    01-JAN-1990
01-JAN-1990
15-JUL-1999
         ENTA.
                                                                                                                      ETXA_ST
P13163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      METAL
METAL
VARIANT
                                 ENTEROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHAIN
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; M28521; AAB06195.1; -. PIR; A33953; A33953. HSSP; P13163; 1SXT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF01123; Stap_Strp_toxin; PRINTS; PR00279; BACTRLTOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Enterotoxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \text{EMBO J. } 15:6832-6840(1996).
                                                                                                                                                                                                                                                                131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "The crystal structure of staphylococcal enterotoxin Zn2+-mediated homodimerization.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dohlsten M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sundstroem M., Abrahmsen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=97157473; PubMed=9003758;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             enterotoxin D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bayles K.W., Iandolo J.J.;
"Genetic and molecular analyses of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Firmicutes; Bacillus/Clostridium gro
Bacillus/Staphylococcus group; Staphylococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.,
STRAIN=ATCC 23235;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=89359112; PubMed=2549000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENTEROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-JUL-1999 (Rel. 3
                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                        Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteriol. 171:4799-4806(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DISEASE: STAPHYLOCOCCAL ENTEROTOXINS CAUSE THE INTOXICATION STAPHYLOCOCCAL FOOD POISONING SYNDROME.
                                                                                                                                                                                                                                                                                                      CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY: THE DIFFERENT S.AUREUS ENTEROTOXINS AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUBUNIT: HOMODIMER; ZINC-DEPENDENT
                                                                                                                                            STAAU
                                                                                                                                                                                                                                                              CTYGGVTPHEGN 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PYROGENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                                                                                                                                                                                      10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IPR001961; Staph_Strep_toxin
1123; Stap_Strp_toxin; 1.
                            (Rel.
(Rel.
(Rel.
TYPE A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                258
                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Toxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA;
                                                                                                                                            STANDARD;
13, Crealeu,
13, Last sequence update,
. 38, Last annotation update)
. bprCURSOR (SEA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Signal;
25
258
258
212
250
250
252
114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           38, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRECURSOR (SED).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                29746 MW;
                                                                                                                                                                                                                                                                                                                                                                         83.3%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AND X-RAY CRYSTALLOGRAPHY (2.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Superantigen;
                                                                                                                                                                                                                                                                                                                                              Score 60; DB 1;
Pred. No. 0.0012;
D; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZINC.
P -> A (IN STRAIN ATCC 23
P -> A (IN STRAIN ATCC 23;
457C6A28D42597FD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZINC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Antonsson P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENTEROTOXIN TYPE D
                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the
                                                                                                                                            257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene encoding staphylococcal
                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zinc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mehindate K.,
                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                         Length 258;
                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ANGSTROMS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S. PYOGENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mourad W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      U
                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        reveals
                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                            0;
```

```
EMBL: M18970; AAA26681.1; -.
PIR; A28664; A28664.
PIR; A29665; A29566.
PDB; 1ESE; 11-JUL-96.
PDB; 1SEA; 15-OCT-95.
PDB; 1SXT; 19-NOV-97.
InterPro; IPRO01961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
                                                                                                                                                                                                                                                                                      J. MOI. BIOI. 269:270-280(1997).

-I- SUBUNIT: MONOMER.

-I- DISEASE: STAPHYLOCOCCAL FOOD POISONING SYNDROME.

-I- MISCELLANEOUS: THIS TOXIN SEEMS TO BE CODED BY A

-I- SIMILARITY: THE DIFFERENT S.AUREUS ENTEROTOXINS
PYROGENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                                                                                                                                                                                                                                   Schad E.M., Papageorgiou A.C., Svensson L.A., Acharya K.R.; "A structural and functional comparison of staphylococcal enterotoxins A and C2 reveals remarkable similarity and dissimilarity.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      enterotoxins.";
Nat. Struct. Biol. 2:680-686(1995).
[6]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          zn2+ at 2.7-A resolution. Implication complex class II binding.";
J. Biol. Chem. 271:32212-32216(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 25-257.

MEDLING-872223; PubMed-3584106;

Huang I.-Y., Hughes J.L., Bergdoll M.S., Schantz E.J.;

"Complete amino acid sequence of staphylococcal enterotoxin J. Biol. Chem. 262:7006-7013(1987).
                                                                                                                                                           use by non-profit institutions as long modified and this statement is not removed entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPARISON OF STRUCTURE OF SEA AND SEC2 MEDLINE-97334373; PubMed-9191070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sundstroem M., Hallen D., Svensson A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Schad E.M., Zaitseva I., Zaitsev V.N., Dohlsten M., Schlievert P.M., Ohlendorf D.H., Svensson L.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Swaminathan S., Furey W.F. Jr., Pletch
"Residues defining V beta specificity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-96022987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "The Co-crystal structure of staphylococcal enterotoxin type A with 2n2+ at 2.7-A resolution. Implications for major histocompatibility
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-97113025; PubMed-8943278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=95354648; PubMed=7628431;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Betley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=88086892; PubMed=3335483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3D-STRUCTURE MODELING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ЕМВО J. 14:3292-3301(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Crystal structure of the superantigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Betley M.J., Mekalanos J.J.;
"Nucleotide sequence of the type A staphylococcal enterotoxin gene.";
J. Bacteriol. 170:34-41(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacillus/Staphylococcus
NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Staphylococcus aureus.
Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misen r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PubMed=7552730;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Staphylococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pletcher J.,
ficity in stap
                                                                                                                                                                             (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           staphylococcal enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schad E.,
                                                                                                                                                                                                                                                                                                                                                        CAUSE THE INTOXICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    staphylococcal
                                                                                                                                                                                                             as
                                                                                                                                                                                            Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sax M.;
                                                                                                                                                                                                             its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dohlsten
                                                                                                                                                                                                                                                                                                         A BACTERIOPHAGE
S AND S.PYOGENES
                                                                                                                                                                                              Ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kalland
                                                                                                                                                                                                                       restrictions
                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            >
                                                                                                                                                                                               for
                                                                                                                                                                                                                'n
                                                                                                                                                                                               commercia
                                                                                                                                                                                                             way
```

```
PRESENTE RESULT OF THE PRESENT OF TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SO SET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ETXE_STAAU
P1293;
01-JAN-1990
01-JAN-1990
15-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STAAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           METAL
METAL
                                                                                                                                                                                                                   use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
Enterotoxin; Toxin; Signal; Superantigen;
                                                                                                      PIR; A28179; A28179.
PDB; 1SEE; 15-OCT-95.
InterPro; IPR001961; Staph_Strep_toxin.
                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EW the European Bioinformatics Institute. There are no restr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  METAL
                                                                                                                                                                          EMBL; M21319; AAA26617.1;
                                                                                                                                                                                                                                                                                                                                                                                                                         +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           enterotoxins."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Swaminathan S., Furey W.F. Jr., Pletcher Residues defining V beta specificity in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=96022987; PubMed=7552730;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Cloning and nucleotide sequence of enterotoxin gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-88257005; PubMed=3384800;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-MJB265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacillus/Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Staphylococcus aureus. Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Enterotoxin; Toxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3D-STRUCTURE MODELING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS00278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00277;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteriol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                         STAPHYLOCOCCAL FOOD POISONING SYNDROME.
SIMILARITY: THE DIFFERENT S.AUREUS ENTEROTOXINS AND
PYROGENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                . Struct. Biol. 2:680-686(1995).
DISEASE: STAPHYLOCOCCAL ENTEROTOXINS CAUSE THE INTOXICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CMYGGVTLHDNN 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity 75.09; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Soltis M.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Rel. 13, Created)
(Rel. 13, Last sequence up
(Rel. 38, Last annotation
TYPE E PRECURSOR (SEE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        170:2954-2960(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STAPH_STREP_TOXIN_1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24
257
130
25
211
249
249
242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AND SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                76.4%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacillus/Clostridium grus group; Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Betley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 55; DB Pred. No. 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Superantigen; Zinc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZINC.
ZINC.
ZINC.
ZINC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENTEROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -> S (IN REF. 2)
ADEBF5BCA1F14677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          м. ј.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   type E staphylococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
.0097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J., Sax M.; staphylococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE
                                                                                                                                                                                                                                                                                     as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ν,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3D-structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                         restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                       S. PYOGENES
                                                                                                                                                                                                                                                                                                                                  EMBL outstation
                                                                                                                                                                                                                                                                                                                                     a collaboration –
MBL outstation –
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

3D-structure

```
₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                 use by non-profit institutions as long modified and this statement is not removed. entitles requires a license agreement (See
                                                                                                           This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Enthe European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content
             PIR; B48826; B48826.
HSSP; P07584; 1IAD.
                                          EMBL; M96170; AAA49438.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HCE1_ORYLA STANDARD; PRT; 270 AA.

P31580;

01-JUL-1993 (Rel. 26, Created)

01-JUL-1993 (Rel. 26, Last sequence update)

01-NOV-1995 (Rel. 32, Last annotation update)

HIGH CHORIOLYTIC ENZYME 1 PRECURSOR (EC 3.4.24.67) (HATCHING ENZYME 2INC-PROTEASE HCE 1 SUBUNIT) (CHORIOLYSIN H 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIGNAL
CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Isolation of cDNAs for LCE and HCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Embryo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei Acanthomorpha; Acanthopterygii; Percomorpha; Atherinomorpha; Beloniformes; Adrianichthyldae; Oryzinae; Oryzias.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hatching enzyme of Oryzias latipes, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yasumasu S., Yamada K., Akasaka K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=93012471;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A., AND SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=8090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oryzias latipes (Medaka fish).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORYLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 130
                                                                         send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                            DEVELOPMENTAL STAGE: PRODUCTION OF THE PROTEIN STARTS IN DAY 2 TO DAY 3 EMBRYOS AND INCREASES THEREAFTER UNTIL HATCHING. PTM: O-GLYCOSYLATED (PROBABLE).

MISCELLANEOUS: IN MEDAKA THE HATCHING ENZYME SYSTEM IS COMPOSED TWO DISTINCT PROTEASES, THE HIGH CHORIOLYTIC ENZYME (HCE), OF WHICH THERE ARE TWO ISOFORMS, AND THE LOW CHORIOLYTIC ENZYME
                                                                                                                                                                                                                                                                                                                            FUNCTION: DARFICIPATES IN THE BREAKDOWN OF THE EGG ENVELODE, WHICH IS DARFICEDATES IN THE EGG EXTRACELLULAR MATRIX, AT THE TIME OF HATCHING. TUS ALLOWING THE NEWLY HATCHED FISH TO 'SWIM FREE. HCE BINDS TIGHTLY TO THE EGG ENVELOPE WHILE IT EXERTS THE CHORIOLYTIC SWELLING ACTION.

CAPALYTIC ACTIVITY: HYDROLYSIS OF THE INNER LAYER OF FISH EGG ENVELOPE. ALSO HYDROLYSES CASEIN AND SMALL MOLECULE SUBSTRATES SUCH AS SUC-LEU-LEU-YAL-TYR-I-MCA.

COPACTOR: BINDS ONE ZINC ION.

SUBCELLULAR LOCATION: STORED AS PROENZYMES IN THE ZYMOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CMYGGVTEHEGN 12
                                                                                                                                                                                 SIMILARITY: BELONGS TO PEPTIDASE FAMILY M12A (ZINC METALLOPROTEASE); ALSO KNOWN AS THE ASTAÇIN SUBFAMILY.
 P07584;
S; M12.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNAs during development.";
Biol. 153:250-258(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CMYGGVTLHDNN 141
                                                                      an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1
28
257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PubMed=1397682;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27
257
29358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 76.48;
75.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENTEROTOXIN TYPE E. 27EDA94B97770CE3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mitsunaga K., Iuchi I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    71-119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             two
                                                                                  (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             concurrent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         constituent proteases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AND
                                                                                                 Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  208-223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 257;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             expression
                                                                                                 Λq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Neoteleostei;
                                                                                                                          restrictions
                                                                                                 and
                                                                                                                                           EMBL
                                                                                                              ı.
                                                                                                                                                       a collaboration
                                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                           outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s of the
                                                                                                              in
                                                                                                commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                          on
                                                                                                              no
                                                                                                                                                                                                                                                           QF
                                                                                                                          its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

-

SIMILARITY:

BELONGS

TO

METALLOPROTEASE);

ALSO

) KNOWN AS T

THE ASTACIN SUBFAMILY FAMILY M12A + +

PTM: O-GLYCOSYLATED (FRODRILL).
MISCELLANEOUS: IN MEDAKA THE HATCHING ENZYME
TWO DISTINCT PROTEASES, THE HIGH CHORTOLYTIC
WHICH THERE ARE TWO ISOFORMS, AND THE LOW CHO

ENZYME SYSTEM IS COMPOSED IOLYTIC ENZYME (HCE), OF

OF.

CHORIOLYTIC

ENZYME

TO DAY 3 EMBRYOS AND INCREASES THEREAFTER IM: O-GLYCOSYLATED (PROBABLE).

```
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shimada H., Yamagami K.;

"Isolation of cDNAs for LCE and HCE, two constituent proteases of the Trisolation of cDNAs for LCE and HCE, two constituent proteases of the Trisolation of cDNAs for LCE and HCE, two concurrent expression of the Trisolating enzyme of Oryzias latipes, and concurrent expression of the Trisolating enzyme of Oryzias latipes, and concurrent expression of their mrnas during development.";

Loev. Biol. 153:250-258(1992).

C. -!- FUNCTION: PARTICIPATES IN THE BREAKDOWN OF THE EGG ENVELOPE, WHICH IS DERIVED FROM THE EGG EXTRACELLULAR MATRIX, AT THE TIME OF HATCHING. THUS ALLOWING THE NEWLY HATCHED FISH TO SWIM FREE. CHORTOLYTIC SWELLING ACTION.

C. -!- CHARLYTIC ACTIVITY: HYDROLYSIS OF THE INNER LAYER OF FISH EGG ENVELOPE. ALSO HYDROLYSES CASEIN AND SMALL MOLECULE SUBSTRATES CONCLARS SUC-LEU-LEU-VAL-TYR-|-MCA.

C. -!- COPACTOR: BINDS ONE ZINC ION.

C. -!- SUBCELLULAR LOCATION: STORED AS PROENZYMES IN THE ZYMOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HCE2_ORYLA
P31581;
01-JUL-1993
                                                                                                                  -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JUL-1993 (Rel. 26, Created)
01-JUL-1993 (Rel. 26, Last sequence update)
01-NOV-1995 (Rel. 32, Last annotation update)
HIGH CHORIOLYTIC ENZYME 2 PRECURSOR (EC 3.4.24.67) (HATCHING ZINC-PROTEASE HCE 2 SUBUNIT) (CHORIOLYSIN H 2).
                                                                                                                                                                                                                                                                                                                                                            Yasumasu S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleos Actinopterygii; Neopterygii; Teleostei; Euteleosstei; Neotele Acanthomorpha; Acanthopterygii; Percomorpha; Atherinomorpha; Beloniformes; Adrianichthyidae; Oryziinae; Oryzias.
                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=93012471; PubMed=1397682;
                                                                                                                                                                                                                                                                                                                                                                                            TISSUE=Embryo;
                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Oryzias latipes (Medaka fish).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORYLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=8090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HCE 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHAIN
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PR00480; ASTACIN. SMART; SM00235; ZnMc; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF01400; Astacin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hydrolase; Metalloprotease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR001506; Astacin.
InterPro; IPR000130; Zn_MTpeptdse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 161 CMYSGIIQHELN 172
                                                                                                               DEVELOPMENTAL STAGE: PRODUCTION OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 CMYGGVTEHEGN
                                                                                                                               GRANULES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity 7; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PS00142; ZINC_PROTEASE; 1.
e; Metalloprotease; Zinc; Glycoprotein; Zymogen; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21
71
169
170
173
173
                                                                                                                                                                                                                                                                                                                                                           Yamada K., Akasaka K., Mitsunaga K., Iuchi I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             70
270
169
170
173
173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63.9%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , WM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 46; DB 1;
Pred. No. 0.43;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTIVATION PEPTIDE.
HIGH CHORIOLYTIC EN
ZINC (CATALYTIC) (B'
BY SIMILARITY.
ZINC (CATALYTIC) (B'
ZINC (CATALYTIC) (B'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZINC (CATALYTIC) (BY SIMI
ZINC (CATALYTIC) (BY SIMI
N-LINKED (GLCNAC. . .) (PO
; D85C972906E3735A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           279
                                                                                                               THE PROTEIN
                                                                                                                                                                                                                                                                                                                constituent proteases of the concurrent expression of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (BY SIMILARITY). (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENZYME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 270
                                                                                              EIN STARTS IN DAY
UNTIL HATCHING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Euteleostomi; ; Neoteleostei;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENZYME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         METAL
CARBOHYD
SEQUENCE
                                                                                                            entities
or send a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
HYPOTHETICAL PROTEIN IN CCCA 5'REGION (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                      MEDLINE=93379042; PubMed=7916623;
Fujlwara Y., Oka M., Hamamoto T., Sone N.;
"Cytochrome c-551 of the thermophilic bacterium PS3, DNA sequence analysis of the mature cytochrome.";
Blochim. Blophys. Acta 114:213-219(1993).
-1- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BACP3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; M96171;
HSSP; P07584;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacillus PS3 (Thermophilic bacterium PS-3).
Bacteria; Firmicutes; Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRINTS; PRO0480; ASTACIN SMART; SM00235; ZnMC; 1.
                                     EMBL; X63125; -; NOT_ANNOTATED_CDS.
Hypothetical protein; Transmembrane
                                                                                                                                                                                                      the
                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Electron and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacillus/Staphylococcus group; Bacillus. NCBI_TaxID-70306;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00142; ZINC_PROTEASE;
Hydrolase; Metalloprotease; Zinc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEROPS; M12.007;
                       Hypothetical
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCA_BACP3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR001506; Astacin.
InterPro; IPR000130; Zn_MTpeptdse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CMYGGVTEHEGN 12
                                                                                       European Bioinformatics Institute. The by non-profit institutions as long ilfied and this statement is not removed. Ittles requires a license agreement (See send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CMYSGIIQHELN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PF01400; Astacin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21
80
178
179
182
188
62
279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
  19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAA49439.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1IAD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ASTACIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
79
279
178
179
182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63.9%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HIGH CHORIOLYTIC ENZYME 2.

ZINC (CATALYTIC) (BY SIMILARITY).

BY SIMILARITY.

ZINC (CATALYTIC) (BY SIMILARITY).

ZINC (CATALYTIC) (BY SIMILARITY).

ZINC (CATALYTIC) (BY SIMILARITY).

N-LINKED (GLORAC. . .) (POTENTIAL).

M; 00244107A8B01B8C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zinc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACTIVATION PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1.
; Glycoprotein; Zymogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150
                                                                                                                                 (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.44;
                                                                                                                                                                         There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       À
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                                                                      Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 279
                                                                                                                                                    γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL).
                                                                                                                                                         and
                                                                                                                                                                                                                        EMBL
                                                                                                                                                                                                                                                                                                                                                                                  sequence
                                                                                                                                                                                                                                           a collaboration
                                                                                                                                                         for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                           outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                         commercial
                                                                                                                                                                                                                                                                                                                                                                                    anc
                                                                                                                                                                                                 on
                                                                                                                                                                              ö
                                                                                                                                                                              way
                                                                                                                                                                                                 its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
RESULT 12
ROC_HUMAN

ID PO7910
AC PO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
Matches
                             This SWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ROC_HUMAN
PO7910; P22628;
01-AUG-1988 (Rel. 08, Created)
01-AUG-1991 (Rel. 19, Last seq
20-AUG-2001 (Rel. 40, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Witteking M., Goerlach M., Friedrichs M., Dreyfuss G., Mueller L.; "1H, 13C, and 15N NMR assignments and global folding pattern of the RNA-binding domain of the human hnRNP C proteins."; Biochemistry 31:6254-6265(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Burd C.G., Swanson M.S., Goerlach M., Dreyfuss G.;
"Primary structures of the heterogeneous nuclear ril
A2, B1, and C2 proteins: a diversity of RNA binding
generated by small peptide inserts.";
                                                                                                                                                                                                                                                                                                                                        STRUCTURE BY MAR OF 1-94.

MEDLINE-92371436; PubMed-1380452;
Goerlach M., Witteking M., Beckman R.A., Mueller L., D

"Interaction of the RNA-binding domain of the hnRNP C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Primary structure differences between proteins nuclear ribonucleoprotein particles."; Nucleic Acids Res. 17:8441-8449(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Primary structure of human nuclear ribonucleoprotein particle C proteins: conservation of sequence and domain structures in heterogeneous nuclear RNA, mRNA, and pre-rRNA-binding proteins.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRUCTURE BY NMR OF 1-94.
MEDLINE=92329450; PubMed=1385725;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PARTIAL SEQUENCE, AND CHARACTERIZATION MEDLINE-90067819; PubMed-2587210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-87257872; PubMed-3110598;
Swanson M.S., Nakagawa T.Y., Levan K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 1-107 AND 121-303 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=90099350; PubMed=2557628; Burd C.G., Swanson M.S., Goerlach M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota;
                                                                                                                                                                                                                                                                                          EMBO J. 11:3289-3295(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Merrill B.M., Barnett S.F., Lestourgeon W.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ĥeterogeneous nuclear RNA, mRNA, an
Mol. Cell. Biol. 7:1731-1739(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HETEROGENEOUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3 YGGVTEHE 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match
                                                                                                                               FUNCTION: MAY PLAY A ROLE IN RIBONUCLEOSOME ASSEMBLY BY NEUTRALIZING BASIC PROTEINS SUCH AS AND B CORE HURNP. SUBCELLULAR LOCATION: NUCLEAR; COMPONENT OF RIBONUCLEOSOMES ALTERNATIVE PRODUCTS: 2 ISOFORMS; C1 AND C2 (SHOWN HERE); ALTERNATIVE SPLICING.

PTM: PHOSPHORYLATED (PROBABLE).
                                                                                                         SIMILARITY: CONTAINS 1 RNA RECOGNITION MOTIF (RRM).
  SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YGGYTEHE 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Natl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l Similarity
7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Acad.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rel. 19, Last sequence update)
Rel. 40, Last annotation update)
NUCLEAR RIBONUCLEOPROTEINS C1/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16394 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 56.
87.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       86:9788-9792(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AEFE892DB2CF7447 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 No .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dreyfuss G.;
ous nuclear ribonucleoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dreyfuss G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
1.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C1/C2 (HNRNP C1 / HNRNP C2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Williams
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C1 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          proteins
                                                                                                                                                                                                                                                                                                                                                                   Dreyfuss G.;
                                                                                                                                                                                                                                                                                                                                             proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              K.R.;
C2 of HeLa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                        ARE
                                                                                                                                                                                                                                                                                                                                             with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    40S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

institutions as long

as its content Usage

Уď and

> for 'n

commercial

is not removed

```
RESULT
YSD1_C/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ROSITE,
ROSITE; PSUL
PROSITE; PSUL
Nuclear protein; N.
Alternative splicing.
POMAIN 16 87
POMAIN 155 161
181 303
120
PROSITE AND PROPERTY 
                                                                                                                                       entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                              Submitted (NOV-1995) to the EMBL/GenBank/DDBJ databases.
-!- CATALYTIC ACTIVITY: A PHOSPHOPROTEIN + H(2)O = A PROTEIN +
ORTHOPHOSPHATE (THIS ENZYME IS SERINE/THREONINE SPECIFIC).
-!- SIMILARITY: BELONGS TO THE PPP FAMILY OF PHOSPHATASES. PP-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P48459;
01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
01-FEB-1996 (Rel. 33, Last sequence update)
01-FEB-1996 (Rel. 33, Last annotation update)
PUTATIVE SERRIME/THREONINE PROTEIN PHOSPHATASE C23G10.1 IN CHROMOSOME
II (EC 3.1.3.16).
                                                   WormPep; C23G10.1; CE01808
                                                                         EMBL; U39851; AAA81073.1; -. HSSP; P08129; 1FJM.
                           InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Latreille P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rhabditidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SMAKI; DEVOLUTION RRM; 1.
PROSITE; PSO0030; RRM_RMP_1; 1.
PROSITE; PSO0030; RRM_RMP_1; 1.
PROSITE; PSO0030; RRM_RMP_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00076; rrm; 1.
SMART; SM00360; RRM; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SWISS-2DPAGE; P07910; HUMAN.
Aarhus/Ghent-2DPAGE; 7207; IEF.
Aarhus/Ghent-2DPAGE; 7222; IEF.
MIM; 164020;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; M29063; AAA36576.1; -.
EMBL; M16342; AAA52680.1; -.
PIR; C34504; C34504.
PIR; A26885; A26885.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       use by non-profit institumodified and this statement entities requires a license
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR000504; RRM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        104 MYGSVTEH 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
nes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 MYGGVTEH 9
                                                                                                                                                                                                                                                                                                                                                                   SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _CAEEL
IPR000934; Ser_thr_phosphtse
IPR001394; UCH-2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    303 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       etazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    33298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  55.6%;
87.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 40;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RNA-BINDING (RRM).

NUCLEAR LOCALIZATION SIGNAL (POTENTIAL).

ASP/GLU-RICH (ACIDIC).

MISSING (IN ISOFORM HNRNP C1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E1B08298184AAC46 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
5.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
```

```
RESULT 14

YIGO_E

JO AUG

AC Q4686]

DT Q1-AUG

DT 20-AUG

DT 20-AUG

DT 20-AUG

DT 20-Bactea

OC Esches

OC Esches

OC Esches

OC Esches

OC AUG

RN SEQUE

RC STRAII

RX BLATT

RA BLATT

RA BLATT

RA BLATT

RA BLATT

RA RILEY

RA RILEY

RA RILEY

RA RILEY

RA RILEY

RA RILEY

RA RUDD

RA MAUB

RT "The

RU [2]

RN ENBL

CC -1- [
CC C This

CC This

CC Ind

CC This

CC EMBL

DR EMBL

D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DR DR DR DR FT FT FT SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 5
                                                                      EMBL; U28377; AAA69183.1; ALT_FRAME.
EMBL; U28377; AAA69184.1; ALT_FRAME.
EMBL; AE000383; AAC76052.1; ALT_FRAME.
EMBL; AE000383; AAC76051.1; ALT_FRAME.
                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rudd K.E.;
Unpublished observations (JUN-1999).
-!- SIMILARITY: TO M.JANNASCHII MJ1155. ALSO SOME SIMILARITY TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-97426617; PubMed-9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V., Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J., Mau B., Shao Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "The complete genome sequence of Science 277:1453-1474(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CONCEPTUAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN=K12 / MG165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YGIQ_ECOLI STANDARD; PRT; 739 AA. Q46861; Q46862; Q46861; Q46862; Q1-NOV-1997 (Rel. 35, Created) 20-AUG-2001 (Rel. 40, Last sequence update) 20-AUG-2001 (Rel. 40, Last annotation update) HYPOTHETICAL 83.5 KDA PROTEIN IN METC-SUFI INTERGENIC REGION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          METAL
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Proteobacteria;
Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YGIQ OR B3015/B3016.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS00125; SER_THR_PHOSPHATASE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PR00114; STPHPHTASE. SMART; SM00156; PP2Ac; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00149; STphosphatase; Pfam; PF00442; UCH-1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                              UPF0004.
- CAUTION: THIS I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 CMYGGVTEH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CMHGGLSQH 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 5; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSLATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            / MG1655;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l protein; H
191 191
193 193
221 221
253 253
254 254
305 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ø
                                                                                                                                                                                                                                                                                                                                                                                                              IS A CONCEPTUAL TRANSLATION; POSITION 319 TO PRODUCE THIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       55.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nlase; Iron; Manganese.
IRON (BY SIMILARITY).
IRON (BY SIMILARITY).
IRON AND MANGANESE (BY SIMILARITY).
GENERAL ACID (BY SIMILARITY).
MANGANESE (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Escherichia coli K-12.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          No. 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
8.7;
                                                                                                                                                                                                                                                                                                                                                                                                                ORF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                           A FRAMESHIFT WAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

Hypothetical protein; EcoGene; EG13019; ygiQ

83503 MW;

Complete

proteome

ECE565EC8915384A CRC64;

```
Query Match
Best Local Similarity
""" onserve
                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Catches 6; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-CV. MOREX; TISSUE-Aleurone;
STRAIN-CV. MOREX; TISSUE-Aleurone;
MEDLINE-96178863; PubMed-8616248;
Tibbot B.K., Skadsen R.W.;
Tibbot B.K., Skadsen R.W.;
"Molecular cloning and characterization of a gibberellin-inducible, putative alpha-glucosidase gene from barley.";
Plant Mol. Biol. 30:229-241[1996).
-1- CATALYTIC ACTIVITY: HYDROLYSIS OF TERMINAL, NON-REDUCING
1.4-LINKED D-GLUCOSE RESIDUES WITH RELEASE OF D-GLUCOSE.
-1- TISSUE SPECIFICITY: HIGH LEVELS SEEN IN THE ALEURONE AND SCUTELLUM AFTER GERMINATION, WHILE LOW LEVELS ARE FOUND IN DEVELOPING SEEDS.
-1- DEVELOPMENTAL STAGE: LEVELS INCREASE STEADILY THROUGHOUT IMBIBITION REACHING MAXIMUM LEVELS AT DAY 7. DURING GERMINATION, LEVELS INCREASE STEADILY THROUGHOUT IMBIBITION REACHING MAXIMUM LEVELS AT DAY 7. DURING GERMINATION, LEVELS INCREASE FROM DAY 2, REACH MAXIMUM LEVELS AT DAY 3 AND DECILIES AT CASEES DAY 5.
                                                                                                                                                                                                                                                                                                                                 EMBL: U22450; AAB02985.1; ...
InterPro; IPR000322; Glyco_hydro_31.
Pfam; PF01055; Glyco_hydro_31; 1.
                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for comentities requires a license agreement (See http://www.isb-sib.ch/anor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                      PROSITE; PS00129; GLYCÓSYL_HYDROL_F31_1; 1.
PROSITE; PS00707; GLYCOSYL_HYDROL_F31_2; 1.
Hydrolase; Glycostdase; Glycoprotin; Signal SIGNAL 1 23 POTENTIAL.
CHAIN 24 877 ALPHA-GLUCOSID.
ACT_SITE 437 437 BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hordeum vulgare (Barley).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; Lillopsida; Poales; Poaceae; Pooideae;

Triticeae; Hordeum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
ALPHA-GLUCOSIDASE PRECURSOR (EC 3.2.1.20) (MALTASE).
                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGLU_HORVU
Q43763;
                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=4513;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          390 CSFCSITEHEG 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 CMYGGVTEHEG 11
 3 YGCVTEHE 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DECLINE AFTER DAY 5.
INDUCTION: BY GIBBERELLIN A3 (GA).
SIMILARITY: BELONGS TO FAMILY 31 OF GLYCOSYL HYDROLASES.
                                 Conservative
                                                                                                                                                     24
437
191
298
338
391
471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                             55.6%;
87.5%;
                                                                                                                                     23
877
437
191
298
338
338
371
471
                                                                                                                    96933 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             55.6%;
54.5%;
                                                                                                              N-LINKED (GLCNAC. . .) (POTENTIAL).
                               Score 40; DB 1;
Pred. No. 17;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 40; DB Pred. No. 14;
                                                                                                                                                                                                                                  ALPHA-GLUCOSIDASE.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        877 AA.
                                                                                                                                                                                                                                                                                     Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                       moved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۳
                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
••
                                                               Length 877;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 739;
                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          on
                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
Db 481 YGGVTEYE 488
```

Search completed: January 2, 2002, 20:50:15 Job time: 210 sec

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 10
                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9n:
   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                           ••
                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                           seq
pas
  length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                        SPTREMBL_17:*
1: sp_archea:*
2: sp_bacteria
                                                                                                                                                                         Match
                                                                                                                                                                                  Query
  473505 seqs, 146272329 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-335-581A-3
72
                                                                                                                                                                                                                                                                                                                                                                                          Listing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 January 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                           sp_rodent:*
sp_virus:*
sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                        sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                     sp_organelle:*
                                                                                                                                                                                                                                                                                                                      sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                sp_fung1:*
                                                                                                                                                                                                                                                                                             sp_phage:*
                                                                                                                                                                                                                                                                                                               sp_mhc:*
                                                                                                                                                                                                                                                                                                                                 sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                        sp_numan:*
                                                                                                                                                                                                                                                    sp_unclassified:*
                                                                                                                                                                                                                                                                                     sp_plant:*
                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                          first
  GenCore version (c) 1993 - 2000
                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2002, 20:48:15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gapext
                                                                                                                                                                                                                                                                                                                                                                                          100%
45 summaries
  09974
009157
009157
0053678
006531
006532
006533
006533
006533
006533
006533
006533
006533
006533
006533
006533
                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Search time 92.66 Seconds (without alignments)
18.943 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                     473505
099t49 staphylococ 0975x4 staphylococ 095157 staphylococ 053678 staphylococ 006531 staphylococ 006532 staphylococ 006534 staphylococ 006535 staphylococ 006535 staphylococ 0957616 staphylococ 09574 streptococc 094779 streptococc 054779 streptococc 054738 streptococc 052753 streptococc 054738 streptococc 052753 streptococc 054738 streptococc 052753 streptococc 054738 streptococc 054738 streptococc 054738 streptococc 054738 streptococc
                                                                                                                                                                         Description
                                            밁
                                                           δÃ
```

```
445553
                                                                                      222222
              10
10
10
10
10
11
11
                                               Q9EZM8
013116
Q27528
Q27528
Q9NWL4
Q9NYE6
Q9NYE6
Q9BY58
0065135
Q9AAC7
Q9AAC7
Q9QYV1
Q13086
Q9STX2
            Q9XANS
Q9JJS1
Q9NAP8
                          Q9LIB7
Q9ABR6
Q99TP7
                                                                                          Q54739
Q9EZM4
Q9EZ17
Q85217
Q99SU3
Q99T46
                                       Q9ZWJ9
Q9ZWKO
Q9aac7 caulobacter
Q23460 arabidopsis
Q9zwf9 arabidopsis
Q9zwk0 arabidopsis
Q9zwk0 arabidopsis
Q9lb7 arabidopsis
Q9abr6 caulobacter
Q99tp7 staphylococ
Q9xan5 streptomyce
Q9js1 mus musculu
Q9nap8 caenorhabdi
Q9qyvl rattus norv
Q13086 homo sapian
Q9stx2 arabidopsis
                                                       Q9ezm4 staphylococ O85217 staphylococ O99su3 staphylococ O99su6 staphylococ O99t46 staphylococ O9ezm8 staphylococ O9ezm8 staphylococ O7528 caenorhabdi O9xw3 caenorhabdi O9xw3 caenorhabdi O9xw3 bomo sapien O9by58 homo sapien O9by58 homo sapien O9by58 homo sapien
                                                                                                           streptococc
```

ALIGNMENTS

```
RESULT 2
Q9R5X4
ID Q9R5X4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAGE OF THE PAGE O
                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q99T49 PRELIMIN
Q99T49;
Q1-JUN-2001 (TrEMBL)
Q1-JUN-2001 (TREMBL)
Q1-JUN-2001 (TREMBL)
Q1-JUN-2001 (TREMBL)
ENTEROTOXIN YENT2.
YENT2 OR SA1644.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

Kuroda M., Ohta T., Uchiyama I., Baba T., Yuzawa H., Kobayashi I.,

Cui L., Oguchi A., Aoki K.I., Nagai Y., Lian J., Ito T., Kanamori M.,

Matsumaru H., Maruyama A., Murakami H., Hosoyama A., Mizutani-Ui Y.,

Takahashi N.K., Sawano T., Inoue R.I., Kaito C., Sekimizu K.,

Hirakawa H., Kuhara S., Goto S., Yabuzaki J., Kanehisa M.,

Yamashita A., Oshima K., Futua Y.,

Yamashita A., Oshima K., Futua K.;

Whole genome sequencing of meticillin-resistant Staphylococcus

aureus "F. 1995 1306 2001"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Staphylococcus aureus subsp. aureus N315. Bacteria; Firmicutes; Bacilus/Clostridium gro Bacillus/Staphylococcus group; Staphylococcus. NCBI_TaxID-158879;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lancet 357:1225-1240(2001).
EMBL; AP003135; BAB42912.1; -.
COMPLETE PROTECOME.
SEQUENCE 136 AA; 15945 MW;
                                                                                                                                                                                                                         1 CMYGGVTEHEGN 12
                                                                                                                                                                                       σ
                                                                                                                                                                                       CMYGGVTEHDGN
                                                                                                                                                                                                                                                                                                                              11;
                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel. 17, Created)
(TrEMBLrel. 17, Last sequence update)
(TrEMBLrel. 17, Last annotation update)
       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                    95.8%;
91.7%;
                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                Score 69; DB 2;
Pred. No. 4.7e-05;
       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D7CBC619820C45FE CRC64;
       234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136
       Ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  group;
                                                                                                                                                                                                                                                                                                                                                                                                     Length 136
                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                              0:
                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Σ,
                                                                                                                                                                                                                                                                                                                                  0
```

```
RESULT
Q53678
ID Q
                                                                                                                                                                         δÃ
                                                             뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                             01-JUL-1997 (TrEMBLrel. 04, Created)
01-JUL-1997 (TrEMBLrel. 04, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
TYPE C ENTEROTOXIN (FRAGMENT).
Staphylococcus intermedius.
Bacteria; Firmicutes; Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         005157
005157;
  Q53678
                                                                                                                                                                                                                                                          Edwards V.M., Deringer J.R., Callantine S.D., Deobald C.F., Berger P.H., Kapur V., Stauffacher C.V., Bohach G.A.; Submitted (FEB-1997) to the EMBL/GenBank/DDBJ databases. EMBL; U91526; AAB50248.1; -. HSSP; P23313; 1JCK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPRO01961; Staph_Strep_toxin.
Pfam; PF01123; StapL_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
SEQUENCE 234 AA; 27122 MW; D6A7B45FB9810052 CRC64;
                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.

MEDLINE-94325995; PubMed-8049778;

Wan den Bussche R.A., Lyon J.D., Bohach G.A.;

Mol. Phylogenet. Evol. 2:281-292(1993).

HSSP; P34071; 15E2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09r5X4;
01-mAY-2000 (TrEMBLrel. 13, Created)
01-mAY-2000 (TrEMBLrel. 13, Last sequence up
01-JUN-2001 (TrEMBLrel. 17, Last annotation
ENTEROTOXIN-PYROGENIC TOXIN.
                                                                                                                                                                                            InterPro; IPR001961; Staph_Strep_toxin.
pfam; Pr01123; Stap_Strp_toxin; 1.
pRINTS; PR00279; BACTRITOXIN.
pROSITE; PS00277; STAPH_STREP_TOXIN_1;
pROSITE; PS00278; STAPH_STREP_TOXIN_2;
NON TEP
                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. STRAIN-95-011195;
                                                                                                                                                                                                                                                                                                                                                         Bacillus/Staphylococcus
NCBI_TaxID=1285;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacillus/Staphylococcus
NCBI_TaxID=1279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Staphylococcus.
Bacteria; Firmicutes;
                                                             110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  105
                                                                                    1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CMYGGVTEHEGN 12
                                                             CMYGGITKHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CMYGGITKHEGN 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                         239 AA;
                                                                                                             Conservative
  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                             121
                                                                                                                                                                         27536 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93.1%;
83.3%;
                                                                                                                       93.1%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacillus/Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                 04, Created)
04, Last sequence update)
17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                      group; Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      group
                                                                                                           2:
                                                                                                                       Score 67;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 67;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                         D660644660DE4191
                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     239
                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                       DB 2;
0.00021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                  Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 234;
                                                                                                                                                                        CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                           0
```

```
RESULT QUESTION RESULT QUESTION RESULT QUESTION RESULT QUESTION RESULT R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.

MEDIINE-94011313; pubmed-8406814;

MEDIINE-94011313; pubmed-8406814;

MARIT JC., Lyon J.D., Roberson J.R., Lupher M., Bohach G.A.;

"Characterization of novel type C staphylococcal enterotoxins: biological and evolutionary implications.";

Infect. Immun. 61:4254-4262(1993).

EMBL; L13376; AAAA6620-1; -

REMBL; L13376; AAAA6620-1; -

RHSSP; P34071; 1SE2.

RHSSP; P34071; 1SE2.

RINTEPTO; IPR001961; Staph_Strep_toxin.

R FINTES; PR00279; BACTRLTOXIN.

R PRINTS; PR00279; BACTRLTOXIN.

R PROSTIE; PS00277; STAPH_STREP_TOXIN.1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  053678;
01-NOV-1996 (TrEMBLrel. (
01-NOV-1996 (TrEMBLrel. (
01-JUN-2001 (TrEMBLrel. 1
ENTEROTOXIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q06531;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Enterotoxin.
NON_TER
SEQUENCE 23
                                                                                            Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1;
PROSITE; PS00278; STAPH_STREP_TOXIN_2;
                                   Enterotoxin; NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence of color of the c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=4446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacillus/Staphylococcus
NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacillus/Staphylococcus group; Staphylococcus.
NCBI_TaxID-1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS00277; STAPH_STREP_TOXIN_1; PROSITE; PS00278; STAPH_STREP_TOXIN_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CMYGGITKHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
   239 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (TrEMBLrel. 01, Created)
(TrEMBLrel. 01, Last sequence update)
(TremBlrel. 17, Last annotation update)
                                                               Toxin; Superantigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ΑĄ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1
27618 MW;
27612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93
83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      group; Staphylococcus.
WW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 67; Pred. No.
BB7BD6204731ED24 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A13E7EB25C6989C2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                   --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                             ENTEROTOXINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                            CAUSE THE INTOXICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .00021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bohach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   enterotoxins:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   enterotoxins:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                             AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   G.A.;
                                                                                                                                                                                                                                                                                                                                                                             S. PYOGENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
```

0,

```
RESULT OR STATE OF THE PROPERTY OF THE PROPERT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARD DRAWN COCCOCCEPT TO THE COCCOCCEPT TO T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRITOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
Enterotoxin; Toxin; Superantigen.
NON_TER
NON_TER
SEQUENCE 239 AA; 27642 MW; C77009F46B0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       006533 PRELIMINARY; PRT; 239 AA. 006533; 01-NOV-1996 (TrEMBLrel. 01, Created) 01-NOV-1996 (TrEMBLrel. 01, Last sequence update) 01-JUN-2001 (TrEMBLrel. 17, Last annotation update) ENTEROTOXIN TYPE C (SECCOPELAND) (FRAGMENT).
STRAIN-MNCOPELAND; MEDLINE-94011313; PubMed-8406814; MEDLINE-94011313; PubMed-8406814; Marr J.C., Lyon J.D., Roberson J.R., Lupher M., Bohach "Characterization of novel type C staphylococcal enterobiological and evolutionary implications.";
                                                                                                                                                                                                   Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacillus/Staphylococcus group; Staphylococcus.
NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group:
Bacillus/Staphylococcus group; Staphylococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
ENTEROTOXIN TYPE C-7 (SEC740N) (FRAGMENT)
                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q06532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     006532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CMYGGITKHEGN 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CMYGGITKHEGN 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27642 MW; C77009F46BC8D645 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 67; DB 2;
Pred. No. 0.00021;
2; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 67; DB 2;
Pred. No. 0.00021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 239;
                                   enterotoxins:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                              G.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
Q06535
ID QC
                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SO DR RE
                                                                                                                                                   В
        Q06535
```

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                   Matches
                                                                                                                                                          PYROGENIC EXOTOXINS ARE ALL RELATED.
EMBL; L1379; AAA26623.1; -.
HSSP; p34071; ISE2.
InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00279; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q06534
Q06534;
Q1-NOV-1996
Q1-NOV-1996
Q1-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                         Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacillus/Staphylococcus group; Staphylococcus.
NCBI_TaxID-1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1996 (TYEMBLEEL 01, Created)
01-NOV-1996 (TYEMBLEEL 01, Last sequence update)
01-JUN-2001 (TYEMBLEEL 17, Last annotation update)
ENTEROTOXIN TYPE C (SECOVINE) (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. MEDLINE-94011313; PubMed-8406814;
                                                                                                                      SEQUENCE
                                                                                                                                 Enterotoxin; Toxin; Superantigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Enterotoxin; Toxin; Superantigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Infect. Immun. 61:4254-4262(1993).
110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            110 CMYGGITKHEGN 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 CMYGGVTEHEGN 12
                        1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
CMYGGITKHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                   l Similarity
10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                     239 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    239 AA;
                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
121
                                                                                                                     27517 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27651 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93.1%;
83.3%;
                                                              93.1%;
                                                   ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 67; [
Pred. No. 0.
                                                                 Score 67; I
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                      F354742619C8D196 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A21A954386AE8625 CRC64;
                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2;
0.00021;
                                                                              DB
                                                                 .00021;
                                                                               <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Indels
                                                   0
                                                                             Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 239
                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INTOXICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AND S.
                                                                                                                                                                                                                                                                         PYOGENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PYOGENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                   0;
                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

9

PRELIMINARY;

PRT;

239

```
OSPOLS
OSSON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                         MEDLINE-2056668; PubMed-11114901; Fitzgerald J.R., Monday S.R., Foster T.J., Bohach G.A., Hartigan Meaney W.J., Smyth C.J.; "Characterization of a putative pathogenicity island from bovine Staphylococcus aureus encoding multiple superantigens."; J. Bacteriol. 18:53-70(2001).

EMBL; AF217235; AAG29599.1; -. InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Staph_Strep_toxin.
Pfam; PF01123; Staph_Strep_toxin; 1.

PRINTS; PR00279; BACTRITOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      O9F0L6;
01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
STAPHYLOCOCCAL ENTEROTOXIN C-BOVINE.
                                                                                                                                                                                                                                                                                                                                                                                                                      Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacillus/Staphylococcus group; Staphylococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDITINE-9401313; PubMed-8406814;

MARY J.C., Lyon J.D., Roberson J.R., Lupher M., Bohach G.A.;

"Characterization of novel type C stabhylococcal enterotoxins: biological and evolutionary implications.";

Infect. Immun. 61:4254-4262(1993)

-1- DISEASE: STAPHYLOCOCCAL ENTEROTOXINS CAUSE THE INTOXICATION STAPHYLOCOCCAL FOOD POISONING SYNDROME.

-1- SIMILARITY: THE DIFFERENT S. AUREUS ENTEROTOXINS AND S. PYOGENES PYROGENIC ENOTOXINS ARE ALL RELATED.

BENEL: L13377; AAA36621.1; -.

EMBL; L13377; AAA36621.1; -.
                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9F0L6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Staphylococcus aureus.
Bactleria; Firmicutes; Bacillus/Clostridium gro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q06535;
01-NOV-1996
01-NOV-1996
01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1,
PROSITE; PS00278; STAPH_STREP_TOXIN_2;
PROSITE; PS00278; STAPH_STREP_TOXIN_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Enterotoxin; Toxin; Superantigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-FRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1996 (TIEMBLTel. 01, 01-NOV-1996 (TIEMBLTel. 01, 01-JUN-2001 (TIEMBLTEL. 17, ENTEROTOXIN TYPE C-3 (SEC3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        110 CMYGGITKHEGN 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CMYGGVTEHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
10; Conserv
                                                                                                                      271 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   239 AA;
             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12
                                                                                                                      31267 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27648 MW;
                             93.1%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93.1%;
    Score 67; DB:
Pred. No. 0.000
2; Mismatches
         2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ν,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 67; I
Pred. No. 0.
                                                                                                                                                                                                                                                                                                             Foster T.J., Bohach G.A., Hartigan P.J.,
                                                                                                                    3493F6228B042F10 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CC3CB3B04E4119E0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <del>! !</del>
                                                      DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BB
                           .00024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .00021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   group;
      0;
                                               Length 271;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 239;
      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
  Gaps
      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
```

```
Bessen D.E., Izzo M.W., Fiorentino T.R. Hollingshead S.K., Beall B.; "Genetic Linkage of exotoxin alleles ar tropism in group A streptococci."; Submitted (MAR-1998) to the EMBL/GenBar EMBL, AF055698; AAD11624.1; -. HSSP: P08095; IB1Z.
                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                       Q9R931;
01-MAY-2000 (
01-MAY-2000 (
01-JUN-2001
InterPro; IPR001961; Staph_Strep_toxin
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9S5Z4
Q9S5Z4;
Q1-MAY-2000
Q1-MAY-2000
Q1-JUN-2001
                                                                                                                 STRAIN-D709;
                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                Bacteria; Firmicutes;
Streptococcus.
                                                                                                                                                                                      Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bessen D.E., Izzo M.W., Fiorentino T.R., "Genetic linkage of exotoxin alleles and tropisms in group A streptococci."; Submitted (OCT-1997) to the EMBL/GenBank/EMBL; AF029051; AAD21315.1; -...
                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1;
PROSITE; PS00278; STAPH_STREP_TOXIN_2;
NON_TER
1 1 1
NON_TER
22 22
SEQUENCE 222 AA; 25884 MW; 121F8466
                                                                                                                                                   NCBI_TaxID=1314;
                                                                                                                                                                                                   SPEA.
                                                                                                                                                                                                                                                                      Q9R931
                                                                                                                                                                                                                                                                                                                                108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR001961; Staph_Strep_toxin.

Dfam: PF01123; Stap_Strp_toxin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-D633;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Streptococcus pyogenes.
Bacteria; Firmicutes; E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EXOTOXIN TYPE A (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SPEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            142
                                                                                                                                                                                                                                                                                                                                                   1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _
                                                                                                                                                                                                                                                                                                                               CIYGGVTNHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CMYGGITKHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CMYGGVTEHEGN
                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                             A
                                                                                                                                                                                                             (FRAGMENT).
                                                                                                                                                                                                                                             (TrEMBLrel.
                                                                                                                                                                                                                       (TrEMBLrel.
                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (TrEMBLrel. 13, (TrEMBLrel. 13, (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                      pyogenes
                                                                                                                                                                                                                                                                                                                                119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12
                                                                                                                                                                                                                                                                                                                                                                                       87
83
                                                                                                                                                                         Bacillus/Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacillus/Clostridium
                                                                                                                                                                                                                        13,
13,
17,
                                                                                                                                                                                                                                                                                                                                                                                       Fiorentino T.R.,
                                                        EMBL/GenBank/DDBJ
                                                                                                                                                                                                                       Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                       Score 63;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                   121F8460992818F8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                              and
                                                                                                                                                                                                                                                                      222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 222
                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                 DB
                                                                               emm
                                                                                                    Caringal R.M.,
                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                      .001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Caringal emm gene
                                                                                                                                                                         group; Streptococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                 <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     group; Streptococcaceae;
                                                                                                                                                                                                                       update)
                                                                              gene markers
                                                         databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  databases
                                                                                                                                                                                                                                                                                                                                                                         ۲,
                                                                                                                                                                                                                                                                                                                                                                                              Length 222;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       markers
                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Beall
rs for
                                                                              for
                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B.;
tissue
                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                         0
```

```
RESULT OF STANDARD PRINTERS OF
    RESULT Q54779 Q54779 QC Ba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFT
                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHAIN
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE;
PROSITE;
NON_TER
NON_TER
SEQUENCE
SPEA.
Streptococcus pyogenes
Bacteria; Firmicutes; 1
                                                              Q54779 PRELIMINARY; PRT; 236 AA. Q54779; Q54613; Q54736; Q54740; Q54741; Q1-NOV-1996 (TrEMBLrel. 01, Created) Q1-NOV-1996 (TEMBLrel. 01, Last sequence update) Q1-JUN-2001 (TrEMBLrel. 17, Last annotation updat TYPE A EXOTOXIN PRECURSOR (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             054696 PRELIMINARY; PRT; 236 AA. 054696; 01-NOV-1996 (TrEMBLrel. 01, Created) 01-NOV-1996 (TrEMBLrel. 01, Last sequence update) 01-JUN-2001 (TrEMBLrel. 17, Last annotation updatatype A EXOTOXIN PRECURSOR (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene encoding pyrogenic exotoxin A (scarlet fever toxin)
Streptococcus pyogenes.";
J. EXP. Med. 174:1271-1274(1991).
EMBL; X61573; CAA43771.1;
HSSP; P08095; 1B1Z.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
STRAIN-WGAS156;
MEDLINE-92044323; PubMed-1940804;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SPEA.
Streptococcus pyogenes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam: PF01123; Stap_Strp_toxin; 1.
PRINTS: PR00279; BACTRLTOXIN.
PROSITE: PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE: PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Streptococcus.
NCBI_TaxID=1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nelson K., Schlievert P.M., Selander R.K., "Characterization and clonal distribution of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR001961; Staph_Strep_toxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     108
                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13
                                                                                                                                                                                                                                                                                  1 CMYGGVTEHEGN 12
|:|||| |||
20 CIYGGVTNHEGN 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CIYGGVTNHEGN 119
                                                                                                                                                                                                                                                                                                                                                                       10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS00277; STAPH_STREP_TOXIN_1; 1. PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1
<1
23
236
236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1
22
>236
236
27575 h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 222
25759
                                                                                                                                                                                                                                                                                                                                                                                         87.5%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            87.5%;
83.3%;
  Bacillus/Clostridium group; Streptococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacillus/Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MW.
                                                                                                                                                                                                                                                                                                                                                                     ; Score 63; D:
Pred. No. 0.0
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 63; I
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
TYPE A EXOTOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 48BB7ADDCD91FBA3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70F54120E79127DF CRC64;
                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ВВ
                                                                                                                                                                                                                                                                                                                                                                                           .0011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           n of four
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                group;
                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                             Length 236;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 222;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            r J.M.;
ir alleles of '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CRC64;
                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Streptococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Na Nelson K., Schlievert P.M., Selander R.K., Musser J.M.;

"Characterization and clonal distribution of four alleles of
gene encoding pyrogenic exotoxin A (scarlet fever toxin) in

Streptococcus pyogenes.";

L. J. Exp. Med. 174:1271-1274(1991).

EMBL; X61569; CAA43770.1; -.

EMBL; X61568; CAA43770.1; -.

EMBL; X61570; CAA43770.1; -.

EMBL; X61570; CAA43776.1; -.

BR EMBL; X61570; CAA43766.1; -.

BR EMBL; X61570; CAA43768.1; -.

BR EMBL; X61570; CAA43769.1; -.

BR EMBL; X61570; CAA43769.1; -.

BR FEMBL; X61570; CAA43769.1; -.

BR FEMBL; X61570; CAA43769.1; -.

BR PROSITS; PRO01961; STAPH_Strep_toxin.

BR PROSITS; PRO0277; STAPH_STREP_TOXIN_1; 1.

BR PROSITS; PS00277; STAPH_STREP_TOXIN_2; 1.
                                                  Nelson K., Schlievert P.M., Selander R.K., Musser J.M.;

"Characterization and clonal distribution of four alleles of
T "Characterization and clonal distribution of four alleles of
T streptococcus pyogenes";
L J. Exp. Med. 174:1271-1274(1991).
R EMBL; X61562; CAA43760.1; -.
R EMBL; X61563; CAA43761.1; -.
R EMBL; X61561; CAA43761.1; -.
R EMBL; X61561; CAA43763.1; -.
R EMBL; X61565; CAA43763.1; -.
R EMBL; X61566; CAA43763.1; -.
R EMBL; X61566; CAA43764.1; -.
                                                                                                                                                                                                                                                                                                                                                                             Q57453;
Q57453;
Q1-NOV-1996;
Q1-NOV-1996;
Q1-JUN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIGNAL
CHAIN
                                                                                                                                                                                                                                                                                                                                                              01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
TYPE A EXOTOXIN PRECURSOR (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON_TER
SEQUENCE
InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1;
                                                                                                                                                                                                                                                                                                                                      Streptococcus pyogenes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-MGAS624 AND MGAS158 AND MGAS485 MEDLINE-92044323; PubMed-1940804;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Streptococcus.
NCBI_TaxID=1314;
                                                                                                                                                                                                                                       MEDLINE-92044323; PubMed-1940804;
                                                                                                                                                                                                                                                                                                                         Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                             NCBI_TaxID=1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120 CIYGGYTNHEGN 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 CMYGGVTEHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity 83.:
10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   236 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1
<1
23
236
                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1
22
>236
236
27468 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87.5%;
83.3%;
                                                                                                                                                                                                                                                                                                                      Bacillus/Clostridium group; Streptococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 63; DB 2;
Pred. No. 0.0011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL.
TYPE A EXOTOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29DF2AD575623A84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MGAS491,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 236;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MGAS495;
                                                                                                                                                                                            of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     s of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

```
DR PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.

KW Signal.

FT NON_TER 1 1 1

FT SIGNAL <1 22 POTENTIAL.

FT CHAIN 23 >236 TYPE A EXOTOXIN.

FT NON_TER 236 236

SQ SEQUENCE 236 AA; 27484 MW; 2EF7F41AAC853600 CRC64;

Ouery Match 87.5%; Score 63; DB 2; Length 236;

Best Local Similarity 83.3%; Pred. No. 0.0011;

Matches 10; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Oy 1 CMYGGVTEHEGN 12

Db 120 CIYGGVTHEGN 131

Search completed: January 2, 2002, 20:52:02

Job time: 227 sec
```

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have score greater than or equal to the score of the result being pu and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq length: 0 seq length: 2000000000
  00000000000
                                                                                                                                                                                                                                                                                                                                                                                               A_Geneseq_1101:*

1: /SIDS2/gcgdata/geneseq/geneseqp/AA1980.DAT:*
2: /SIDS2/gcgdata/geneseq/geneseqp/AA1981.DAT:*
3: /SIDS2/gcgdata/geneseq/geneseqp/AA1981.DAT:*
4: /SIDS2/gcgdata/geneseq/geneseqp/AA1983.DAT:*
5: /SIDS2/gcgdata/geneseq/geneseqp/AA1984.DAT:*
6: /SIDS2/gcgdata/geneseq/geneseqp/AA1985.DAT:*
6: /SIDS2/gcgdata/geneseq/geneseqp/AA1985.DAT:*
7: /SIDS2/gcgdata/geneseq/geneseqp/AA1986.DAT:*
8: /SIDS2/gcgdata/geneseq/geneseqp/AA1989.DAT:*
9: /SIDS2/gcgdata/geneseq/geneseqp/AA1980.DAT:*
10: /SIDS2/gcgdata/geneseq/geneseqp/AA1990.DAT:*
11: /SIDS2/gcgdata/geneseq/geneseqp/AA1991.DAT:*
13: /SIDS2/gcgdata/geneseq/geneseqp/AA1993.DAT:*
14: /SIDS2/gcgdata/geneseq/geneseqp/AA1994.DAT:*
15: /SIDS2/gcgdata/geneseq/geneseqp/AA1995.DAT:*
16: /SIDS2/gcgdata/geneseq/geneseqp/AA1995.DAT:*
17: /SIDS2/gcgdata/geneseq/geneseqp/AA1997.DAT:*
18: /SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
20: /SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
21: /SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
22: /SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
23: /SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
24: /SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
25: /SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
26: /SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
27: /SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
28: /SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
29: /SIDS2/gcgdata/geneseq/geneseqp/AA1999.DAT:*
                                                                                                                                                                                                                                Query
Match
  90.1
90.1
90.1
90.1
90.1
90.1
90.1
90.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-335-581A-34
71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     January 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     522463 segs, 74073290 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gapop 10.0 , Gapext 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CMYGGVTLHEGN 12
                                                                                                                                                                                                                                  Length
  112
112
112
114
114
114
114
116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2002, 20:48:13 ;
                                                                                                                                                                                                                                  DВ
                                      19
21
22
22
19
19
19
                                                                                                                                                                                                                                  Ħ
                                    AAW72422
AAY97838
AAY97146
AAY72184
AAY72184
AAW72424
AAW72424
AAW72424
                    AAY97842
                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Search time 77.31 Seconds (without alignments)
11.498 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   522463
                                Peptide #6343, der
Peptide from regio
Peptide #3 for red
Staphylococcal/str
Peptide #6344, der
Peptide #5 for red
                                                                                                                                                                                                                                Description
Staphylococcal/str
Peptide #6347, der
                                                                                                                                                     Staphylococcus aur
                                                                                                                                                                       Peptide #1 for red
Staphylococcal/str
                                                                                                                                                                                                                                                                                                                                               printed,
```

į	л	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12
6	'n	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
	7	.7	.7	.7	87.3	7.	7.	7.	.7	.7	7.	7.	7.	7.	7.	.7		0.	0		0	90.1	0.	90.1	0.	0	90.1	0	90.1	0	0	.0		90.1
i.	2	233	233	233	233	233	233	230	230	230	23	23	12	12	12	12	266	239	239	239	239	239	239	239	239	239	239	239	238	238	238	3 8	38	38
t	၁ ၁	21	21	18	18	14	12	22	14	12	20	17	22	22	21	21	21	22											22	14	12	22	21	19
į	7	t n	AAY70103	AAW06738	AAW35373	AAR45011	AAR13203	AAB67339	AAR45012	AAR13204	AAW73919	AAW04492		AAY72182		AAY97844	AAY70108	AAB67342	AAY06253	AAY06252	AAY06251	AAY06258	AAY06257	AAY06256	AAY06255	AAY06254	AAR45015	AAR13207	34	AAR45016	320	7218	784	AAW72427
orapis] +0000ccao aux		Se	Mutant Staphylococ	1000	Staphylococcus ent	Staphylococcal ent	Staphylococcal ent	Staphylococcus aur	Staphylococcal ent	Staphylococcal ent	Staphylococcal ent	ococca	Peptide from regio	Peptide from regio	Staphylococcus aur	Staphylococcus aur		lococcus	lococcal	lococcal	lococcal	Staphylococcal gro	lococcal	lococcal	Staphylococcal gro	_	l en	Staphylococcal ent	Staphylococcus aur	Staphylococcal ent	ococcal	e #6348,	phylococcal/	Peptide #6 for red

ALIGNMENTS

AAW72422 RESULT

Ъ

```
ACC CONTRACT CONTRACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Synthetic.
Staphylococcus sp.
Streptococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Toxic shock syndrome; immunogenic response; bacterial infection; staphylococcal enterotoxin; streptococcal pyrogenic toxin; antibody; autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW72422;
                                                                                                                                                                                                                Bannan
                                                                                                                                                                                                                                                                                                                                                                                            07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9845325-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptide #1 for reducing symptoms of toxic shock syndrome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAW72422 standard; peptide;
                                                                                                                                                                                                                                                                                                    (UYRQ ) UNIV ROCKEFELLER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-OCT-1998
                                                                                                                                                                                                                ď,
                                                                                                                                                                                                                Zabriskie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                            97US-0838413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98WO-US06663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ą
```

New peptides that generate antibodies against staphylococcal and streptococcal toxins - used to diagnose, treat or prevent toxic

WPI; 1998-568335/48.

shock and autoimmune diseases

```
B. 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
The invention relates to novel peptides (AAY97838-Y97843) comprising
                                 Claim 4; Page 88; 115pp; English.
                                                                      Peptides useful for preventing and reducing the symptoms of toxic shock syndrome and septic shock from staphylococcal and streptococcal infections -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 X1, X8, X13 and X24 = L, T or V; X3, X25 and X26 = any amino acid (aa) or are absent; X27 = L or Y; all other X may be any aa. The peptides can be used to generate serum antibodies (Ab) that bind at least one staphylococcal enterotoxin (SE) or streptococcal endotoxin (SPE). Ab are used: (1) for diagnostic detection of SPEA or SEA, SEB and SED, in usual immunoassays; (ii) to inhibit blastogenesis of human mononuclear cells in presence of these toxins (i.e. to protect against or alleviate toxic shock or autoimmune disease associated with bacterial infections);
                                                                                                                                                              Bannan JD, Visvanathan K,
                                                                                                                                                                                                                            07-OCT-1998;
18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                      Synthetic.
Staphylococcus aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and (iii) for passive immunisation against effects of the toxins. The peptides generate Ab that are cross-reactive with toxins from a variety of bacteria. The present sequence represents a specifically claimed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present invention describes peptides having consensus sequences #1 or #2, optionally as part of a larger molecule of size at least 6-8 kD. Where consensus sequence #1 and #2 are: X25X26YGGX1TX2X3X4X5N #1, Where KX6X7X8X9X10X11X12X130X14X15X16RX17X18X27X19X20X21X22X33X24Y #2, where
                                                                                                                                                                                              (UYRQ ) UNIV ROCKEFELLER.
                                                                                                                                                                                                                                                                           24-SEP-1999;
                                                                                                                                                                                                                                                                                                           13-APR-2000
                                                                                                                                                                                                                                                                                                                                           WO200020598-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pyrogenic exotoxin; enterotoxin; streptococcal infection; staphylococcal infection; septic shock; toxic shock; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Staphylococcal/streptococcal pyrogenic toxin-derived peptide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-AUG-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY97838 standard; peptide; 12 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          example of a peptide of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 CMYGGVTLHEGN 12
                                                                                                                                2000-303782/26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cmyggvtehegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                            98US-0168303.
99US-0335581.
                                                                                                                                                                                                                                                                           99WO-US22180
                                                                                                                                                                                                                                                                                                                                                                       'Group A'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          90.18;
91.78;
                                                                                                                                                              Zabriskie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 64; DB 19;
Pred. No. 7.1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

```
Ъ
                                                                                                                                                                                                                                                                                                                                                                                                               QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      staphylococcal enterotoxin or streptococcal exotoxin and both the peptides and antibodies can be used in diagnostic assays to aid in the diagnosis of disease related to the presence of bacterial toxins. Nuclei acids encoding a peptide of the invention can be used for the production of the peptides for diagnostic reagents, as vaccines and for theraples for pyrogenic exotoxin related diseases. Vectors expressing high levels of the peptides can be used in immunotherapy and immunoprophylaxis when expressed in humans. The antibodies are used for passive immunisation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           exotoxins) constitute a family of structurally related toxins which share similar biological activities. They stimulate CD4+, CD8+ and gamma-delta+ T-cells by binding the beta-chain variable region (V-beta) elements on the lateral face of the T-cell receptor (TCR) while simultaneously binding the lateral face of the class II major histocompatibility complex (MHC) of antigen presenting cells. This causes histocompatibility complex (MHC) of antigen presenting cells. This causes aberrant proliferation of T-cells, which stimulates other components of the immune system, causing injury to the host. The peptides are used to prevent, treat or protect against toxic shock and septic shock resulting from bacterial infections in mammals, particularly humans. The peptides examples of inducing serum antibodies that bind at least one caterother constants of the period of the constants of the constants of the constants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 therapy to prevent or increase resistance to toxic shock syndrome or septic shock and to ameliorate the effects of conditions associated with the presence of staphylococcal or streptococcal pyrogenic toxins. The amino acid sequences of the peptides are sufficiently common that they can be used for eliciting antibodies which are cross-reactive with toxins derived from various bacteria. Sequences AAY97838-Y978343 represent the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   consensus amino acid sequence derived from two conserved regions (regions 1 and 2) of Staphylococcus aureus enterotoxins and streptococcal pyrogenic toxins. Consensus region 1a (a preferred consensus region 1) has the sequence X25-X26-Y-G-G-X1-T-X2-X3-X4-X5-N consensus region 2) has the sequence X25-X26-Y-G-G-X1-T-X2-X3-X4-X5-N consensus region 2) has
                        Staphylococcal infection; enterotoxin; septic shock; toxic shock;
                                                                        Staphylococcus aureus enterotoxin SEC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        synthetic peptides based on consensus consensus regions 1 and 2 of Staphylococcus aureus and Group A streptococcal pyrogenic toxins. These peptides can be administered to a mammal to raise serum antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention also relates to serum antibodies induced by the peptides which provide protection against, or reduce the severity of toxic shoc and septic shock caused by the staphylococcal and streptococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      X9-X10-X11-X12-X13-D-X14-X15-X16-R-X17-X18-X27-X19-X20-X21-X22-X23-X24-Y (AAY97864), where: X1, X8, X13 and X24 are each independently selected from L, I and V; X2, X4, X5, X6, X7, X9, X10, X11, X12, X14, X15, X16, X17, X18, X19, X20, X21, X22 and X23 are each independently selected from the group consisting of any amino acid; X3, X5 and X26 are each independently selected from the group consisting
                                                                                                                            29-AUG-2000
                                                                                                                                                                               AAY97846
                                                                                                                                                                                                                             AAY97846 standard; peptide; 12 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for protection against or amelioration of toxic or septic shock
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pyrogenic toxins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      X27 is either L or Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              x3, x5 and x26 are each independently s
of any amino acid and of no amino acid;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the sequence K-X6-X7-X8-
                                                                                                                                                                                                                                                                                                                                                                                       1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                  \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ogenic toxins. The pyrogenic exotoxins of Group A streptococci and enterotoxins of Staphylococcus aureus (which are also pyrogenic
                                                                                                                                                                                                                                                                                                                                                               cmyggvtehegn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 64; DB 21;
Pred. No. 7.1e-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                      conserved region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     shock
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

vaccine; antibody.

Staphylococcus aureus

```
CC exotoxins) constitute a family of structurally related toxins which CC share similar biological activities. They stimulate CD4+, CD8+ and CC gamma-delta+ T-cells by binding the beta-chain variable region (V-beta) CC elements on the lateral face of the T-cell receptor (TCR) while CC elements on the lateral face of the T-cell receptor (TCR) while CC simultaneously binding the lateral face of the Class II major CC instruction of T-cells, which stimulates other components of the inmune system, causing injury to the host. The peptides are used to prevent, treat or protect against toxic shock and septic shock resulting CC from bacterial infections in mammals, particularly humans. The peptides are used for inducing serum antibodies that bind at least one staphylococcal enterotoxin or streptococcal exotoxin and both the CC diagnosis of disease related to the presence of bacterial toxins. Nucleic acids encoding a peptide of the invention can be used for the production of the peptides can be used in immunotherapy and immunoprophylaxis when CC of the peptides can be used in immunotherapy and immunoprophylaxis when CC the presence of staphylococcal or streptococcal pyrogenic toxins. The caphic shock and to ameliorate the effects of conditions associated with the presence of staphylococcal or streptococcal pyrogenic toxins. The CC amino acid sequences of the peptides are sufficiently common that they CC am be used for eliciting antibodies which are cross-reactive with toxins derived from various bacteria. Sequences AAY97844-Y97852 represent CC conserved region 1 of various Staphylococcus aureus enterotoxins and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and septic shock caused by the staphylococcal and streptococcal pyrogenic toxins. The pyrogenic exotoxins of Group A streptococci and the enterotoxins of Staphylococcus aureus (which are also pyrogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    X9-X10-X11-X12-X13-D-X14-X15-X16-R-X17-X18-X27-X19-X20-X21-X22-X23-X24-Y (AAY97864), where: X1, X8, X13 and X24 are each independently selected from L, I and V; X2,X4, X5, X6, X7, X9, X10, X11, X12, X14, X15, X16, X17, X18, X19, X20, X21, X22 and X23 are each independently selected from the group consisting of any amino acid; X3, X5 and X26 are each independently selected from the group consisting of any amino acid; X3, X5 and X26 are each independently selected from the group consisting of any amino acid and of no amino acid;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to novel peptides (AAY97838-Y97843) comprising a consensus amino acid sequence derived from two conserved regions (regions 1 and 2) of Staphylococcus aureus enterotoxins and streptococcal pyrogenic toxins. Consensus region 1a (a preferred consensus region 1) has the sequence X25-X26-Y-G-G-X1-T-X2-X3-X4-X5-N (AAY97863) and consensus region 2a (a preferred consensus region 2) has the sequence K-X6-X7-X8-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  07-OCT-1998;
18-JUN-1999;
Group A streptococci pyrogenic exotoxins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       x27 is either L or Y.

The invention also relates to serum antibodies induced by the peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 1; Page 72; 115pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptides useful for preventing and reducing the symptoms of toxic shock syndrome and septic shock from staphylococcal and streptococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200020598-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 which provide protection against, or reduce the severity of toxic shock
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0168303
99US-0335581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US22180.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zabriskie
```

```
밁
                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 10
                                                               Query Match
Best Local
                                                     Matches
                                                                                                                                             The peptide, nucleic acid encoding the peptide and antibody (Ab) produced against the peptide are useful for inhibiting blastogenesis of mononuclear cells (eg. T cells) in the presence of human immunodeficiency virus (HIV), inhibiting HIV replication and protecting a mammal against the deleterious effects of HIV. The peptide is also used to ameliorate the effects of autoimmune diseases associated with the presence of HIV. The Ab is used for passively immunising a mammal against the deleterious effects of HIV.
                                                                                                                                                                                                                                                                                                                                               Providing protection against, and reducing the severity of, human immunodeficiency virus infections and associated deleterious effects, using peptides from homologous sequences of staphylococcal and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Streptococcus sp. Staphylococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               streptococcal pyrogenic exotoxin; autoimmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY72176 standard; peptide;
                                                                                                                    Sequence
                                                                                                                                                                                                                                                      streptococcal pyrogenic exotoxin
                                                                                                                                                                                                                                                                                                           Claim 5; Page 38;
                                                                                                                                                                                                                                                                                                                                      streptococcal toxins
                                                                                                                                                                                                                                                                                                                                                                                                                                Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200078790-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mononuclear cell; blastogenesis; inhibitor; HIV; replication; therapy; staphylococcal enterotoxin; human immunodeficiency virus; T cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peptide #6343, derived from streptococcal and staphylococcal toxins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAY72176;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         (UYRQ ) UNIV ROCKEFELLER
 ۳
                           <u>بــ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                    present sequence is peptide #6343, derived from region 1 of homologous sequences of staphylococcal enterotoxin and
             CMYGGVTLHEGN
cmyggvtehegn 12
                                                                                                                                                                                                                                                                                                                                                                                                       2001-080820/09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cmyggitkhegn
                                                    l Similarity
11; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
10; Conser
                                                                                                                     12 AA;
                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000WO-US16680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-0336627
                                                                                                                                                                                                                                                                                                                                                                                                                                Zabriskie JB;
                                                                                                                                                                                                                                                                                                           76pp; English
                                                                 90.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     90.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 64; DB Pred. No. 7.1e 1; Mismatches
                                                     0
                                                                                                                                                                                                                                                                  staphylococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12
                                                                 Score 64; DB 22;
Pred. No. 7.1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ą
                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .1e-05;
                                                                              Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 12;
                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

G

```
AAW7
ID
XX
AC
AC
XX
AC
XX
AC
XX
XX
DT
DT
XX
XX
XX
XX
XX
XX
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULTA
ARAT72LTB
ARAT7A
ARA
                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                     2424
     autoimmune
                 Toxic shock syndrome; immunogenic response; bacterial infection; staphylococcal enterotoxin; streptococcal pyrogenic toxin; antibody;
                                                                                                                 Peptide #3
                                                                                                                                                                      22-DEC-1998
                                                                                                                                                                                                                                AAW72424;
                                                                                                                                                                                                                                                                            AAW72424 standard; peptide; 14 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The peptide, nucleic acid encoding the peptide and antibody (Ab) produced against the peptide are useful for inhibiting blastogenesis of mononuclear cells (eg. T cells) in the presence of human immunodeficiency virus (HIV), inhibiting HIV replication and protecting a mammal against the deleterious effects of HIV. The peptide is also used to ameliorate the effects of autoimmune diseases associated with the presence of HIV. The Ab is used for passively immunising a mammal against the deleterious effects of HIV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence is a peptide from region 1 of staphylococcal enterotoxin SEC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            providing protection against, and reducing the severity of, human immunodeficiency virus infections and associated deleterious effects, using peptides from homologous sequences of staphylococcal and streptococcal toxins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Page 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200078790-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Staphylococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (UYRQ ) UNIV ROCKEFELLER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-JUN-2000; 2000WO-US16680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               autoimmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      staphylococcal enterotoxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mononuclear cell; blastogenesis; inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY72184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY72184 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                             \vdash
                                                                                                                                                                                                                                                                                                                                      σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                        cmyggitkhegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10;
disease.
                                                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               region 1 of staphylococcal enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                      reducing symptoms of toxic shock syndrome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0336627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zabriskie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        90.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ımmunisation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               76pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          esis; inhibitor; HIV; re human immunodeficiency
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 64; DB 22; Pred. No. 7.1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                replication; therapy; cy virus; T cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
멍
                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                AAY97840
                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                     x1, x8, x13 and x24 = L, I or V; x3, x25 and x36 = any anino acid (aa) or are absent; x27 = L or Y; all other x may be any aa. The peptides can be used to generate serum antibodies (Ab) that bind at least one staphylococcal enterotoxin (SE) or streptococcal endotoxin (SE). Ab are used: (i) for diagnostic detection of SPEA or SEA, SEB and SED, in usual immunoassays; (ii) to inhibit blastogenesis of human mononuclear cells in presence of these toxins (i.e. to protect against or alleviate toxic shock or autoimmune disease associated with bacterial infections); and (iii) for passive immunisation against effects of the toxins. The peptides generate Ab that are cross reactive with toxins from a variety of bacteria. The present sequence represents a specifically claimed example of a peptide of the present invention.
                                       Staphylococcus aureus
                                                      Synthetic
                                                                                   antibody.
                                                                                              Pyrogenic exotoxin; enterotoxin;
staphylococcal infection; septic
                                                                                                                                       Staphylococcal/streptococcal pyrogenic toxin-derived peptide,
                                                                                                                                                                                                    AAY97840;
                                                                                                                                                                         29-AUG-2000
                                                                                                                                                                                                                               AAY97840 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention describes peptides having consensus sequences #1 or #2, optionally as part of a larger molecule of size at least 6-8 kD where consensus sequence #1 and #2 are: x25x26xGGX1Tx2X3X4X5N #1, KX6X7X8X9X10X11X12X13DX14X15X16RX17X18X27X19X20x21X22X33X24Y #2, where
                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 4; Page 53; 69pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New peptides that generate antibodies against staphylococcal and streptococcal toxins - used to diagnose, treat or prevent toxic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1998-568335/48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         shock and autoimmune diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bannan JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-OCT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9845325-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic.
Staphylococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                 1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                            7
                                                                                                                                                                                                                                                                                                    cmyggvtehegn
                                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zabriskie JB
                                                                                                                                                                                                                                                                                                                                                                                                                                    14 AA;
                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97US-0838413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98WO-US06663
                                                                                                                                                                                                                                                                                                       12
                                                                                                                                                                                                                              peptide; 14
                                                                                                                                                                                                                                                                                                                                                                          90.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                            Score 64;
Pred. No.
                                                                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                               shock;
                                                                                                            streptococcal infection;
                                                                                              toxic shock; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                         DB 19;
                                                                                                                                                                                                                                                                                                                                                                         .4e-05;
                                                                                                                                                                                                                                                                                                                                                                                     Length 14;
                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                         Gaps
```

0

WO200020598-A1 Streptococcus sp.

'Group A'.

13-APR-2000

```
CC share similar biological activities. They stimulate CD4+, CD8+ and CC gamma-delta+ T-cells by binding the beta-chain variable region (V-beta) CC elements on the lateral face of the T-cell receptor (TCR) while CC simultaneously binding the lateral face of the class II major Simultaneously binding the lateral face of the class II major CC simultaneously binding the lateral face of the class II major his causes can be reart proliferation of T-cells, which stimulates other components of the immune system, causing injury to the host. The peptides are used to the inducing serum antibodies that bind at least one components of component, treat or protect against toxic shock and septic shock resulting from bacterial infections in mammals, particularly humans. The peptides are used for inducing serum antibodies that bind at least one components of disease related to the presence of bacterial toxins. Nucleic acids encoding a peptide of the invention can be used for the production of the peptides for disgnostic reagents, as vaccines and for therapies of the peptides can be used in immunotherapy and immunoprophylaxis when components of staphylococcal or streptococcal pyrogenic toxins. The components of staphylococcal or streptococcal pyrogenic toxins. The components of staphylococcal or streptococcal pyrogenic toxins. The components of staphylococcus aureus and Group A streptococcal pyrogenic toxins. The components of the peptides are sufficiently common that they can be used for eliciting antibodies which are cross-reactive with toxins consensus regions 1 and 2 of the synthetic peptides based on consensus consensus regions 1 and 2 of consensus consensus respons toxins. The consensus consensus respons 1 and 2 of the synthetic peptides can be administered to amammal to raise serum antibodies are softic shock.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention also relates to serum antibodies induced by the peptides which provide protection against, or reduce the severity of toxic shocl and septic shock caused by the staphylococcal and streptococcal pyrogenic toxins. The pyrogenic exotoxins of Group A streptococci and the enterotoxins of Staphylococcus aureus (which are also pyrogenic exotoxins) constitute a family of structurally related toxins which
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (AAY97864), where: X1, X8, X13 and X24 are each independently selected from L, I and V: X2,X4, X5, X6, X7, X9, X10, X11, X12, X14, X15, X16, X17, X18, X19, X20, X21, X22 and X23 are each independently selected from the group consisting of any amino acid; X3, X5 and X26 are each independently selected from the group consisting of any amino acid and of no amino acid; X27 is either L or Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               consensus amino acid sequence derived from two conserved regions (regions 1 and 2) of Staphylococcus aureus enterotoxins and streptococcal pyrogenic toxins. Consensus region 1a (a preferred consensus region 1) has the sequence x25-x26-y-G-G-X1-T-x2-x3-x4-x5-N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to novel peptides (AAY97838-Y97843) comprising consensus amino acid sequence derived from two conserved regions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-303782/26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07-OCT-1998;
18-JUN-1999;
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (AAY97863) and consensus region 2a (a preferred consensus region 2) has the sequence K-X6-X7-X8-
x9-X10-X11-X12-X13-D-X14-X15-X16-R-X17-X18-X27-X19-X20-X21-X22-X23-X24-Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Peptides useful for preventing and reducing the symptoms of toxic shock syndrome and septic shock from staphylococcal and streptococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Page 88; 115pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Visvanathan K,
₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0168303
99US-0335581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US22180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              English.
                                                                                                   amelioration of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zabriskie JB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          shock
```

```
RRSULT
RAY72178
ID AAY7
XX
AAY7217
AC AAY7
XX
AC AAY7
XX
DT 24-A
DT 24
밁
                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best
                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                    Streptococcal pyrogenic exotoxin.

The peptide, nucleic acid encoding the peptide and antibody (Ab) produced against the peptide are useful for inhibiting blastogenesis of mononuclear cells (eg. T cells) in the presence of human immunodeficiency virus (HIV), inhibiting HIV replication and protecting a mammal against the deleterious effects of HIV. The peptide is also used to ameliorate the effects of autoimmune diseases associated with the presence of HIV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present sequence is peptide #6344, a cross-linked polymer derived from the homologous sequences of staphylococcal enterotoxin and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Providing protection against, and reducing the severity of, human immunodeficiency virus infections and associated deleterious effections peptides from homologous sequences of staphylococcal and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   staphylococcal enterotoxin; human immunodeficiency virus; T cell; streptococcal pyrogenic exotoxin; autoimmune disease; immunisation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 5; Page 38; 76pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   streptococcal toxins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-080820/09.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Staphylococcus sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Streptococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY72178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY72178 standard; peptide;
                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                   effects of
                                                                                                                                                                                                                                                                                                                                               The Ab is used for passively immunising a mammal against the deleterious
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-JUN-2000; 2000WO-US16680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mononuclear cell; blastogenesis; inhibitor; HIV; replication; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide #6344,
                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CMYGGVTLHEGN 12
ب
                                                      1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cmyggvtehegn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11;
                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                         14 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       derived from streptococcal and staphylococcal toxins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0336627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zabriskie JB
12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   90.1%;
91.7%;
                                                                                                                                            90.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14
                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                         Score 64; DB 22;
Pred. No. 8.4e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 64; DB 21;
Pred. No. 8.4e-05;
                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 21;
                                                                                                                                                                 Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               effects,
                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

RESULT AAW72426

```
AAY97
ID
XX
AC
AC
XX
DT
XX
                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                       RESULT 10
                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                        The present invention describes peptides having consensus sequences #1 CC or #2. Optionally as part of a larger molecule of size at least 6-8 kD. CC Where consensus sequence #1 and #2 are: X25x26YGGX1TX2X3X4X5N #1.
CC KX6X7X8X9X10X11X12X13DX14X15X16XX17X18X27X19X20X21X22X3X24Y #2, where CC X1, X8, X13 and X24 - L, I or Y, X3, X25 and X26 - any manno acid (aa) CC or are absent; X27 - L or Y; all other X may be any aa. The peptides CC can be used to generate serum antibodies (Ab) that bind at least one CC staphylococcal enterotoxin (SE) or streptococcal endotoxin (SPB). Ab CC are used: (1) for diagnostic detection of SPEA or SEA, SEB and SED, in CC usual immunoassays; (ii) to inhibit blastogenesis of human mononuclear CC cells in presence of these toxins (i.e. to protect against or alleviate CC toxic shock or autoimmune disease associated with bacterial infections); CC and (iii) for passive immunisation against effects of the toxins. The peptides generate Ab that are cross-reactive with toxins from a variety of bacteria. The present sequence represents a specifically claimed or annotation of the present sequence represents.
                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                        Query Match
Best Local
             29-AUG-2000
                                            AAY97842;
                                                                          AAY97842 standard;
                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                   example of a peptide of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 4; Page 54; 69pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New peptides that generate antibodies against staphylococcal and streptococcal toxins - used to diagnose, treat or prevent toxic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Staphylococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Peptide #5 for reducing symptoms of toxic shock syndrome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-OCT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9845325-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Toxic shock syndrome;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-DEC-1998 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW72426 standard; peptide; 36 AA
                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                          سر
                                                                                                                                                                                         1 CMYGGVTLHEGN 12
                                                                                                                                                          cmyggvtehegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         autoimmune diseases
                                                                                                                                                                                                                                                                                                       36
                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zabriskie JB;
             (first entry)
                                                                                                                                                                                                                                                                                                       Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    enterotoxin; streptococcal pyrogenic toxin; antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97US-0838413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98WO-US06663
                                                                         peptide;
                                                                                                                                                                                                                                        90.18;
91.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunogenic response; bacterial infection;
                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                      Score 64;
Pred. No.
                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                       DB 19;
                                                                                                                                                                                                                                      .00024;
                                                                                                                                                                                                                                                   Length 36;
                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                      0;
```

```
CC which provide protection against, or reduce the severity of toxic shock CC and septic shock caused by the staphylococcal and streptococcal and streptococcal and septic shock caused by the staphylococcal and streptococcal and CC pyrogenic toxins. The pyrogenic exotoxins of Group A streptococcal and CC the enterotoxins of Staphylococcus aureus (which are also pyrogenic CC share similar biological activities. They stimulate CD4+, CD8+ and CC share similar biological activities. They stimulate CD4+, CD8+ and CC share similar by binding the beta-chain variable region (V-beta) CC elements on the lateral face of the T-cell receptor (TCR) while CC instocompatibility complex (MHC) of antigen presenting cells. This causes aberrant proliferation of T-cells, which stimulates other components of CC the immune system, causing injury to the host. The peptides are used to prevent, treat or protect against toxic shock and septic shock resulting CC from bacterial infections in mammals, particularly humans. The peptides can be used in diagnostic assays to aid in the CC diagnosis of disease related to the presence of bacterial toxins. Nucleic caids encoding a peptide of the invention can be used for the reposition of the peptides for diagnostic reagents, as vaccines and for therapies CC for pyrogenic exotoxin related diseases. Vectors expressing high levels CC of the peptides can be used in immunotherapy and immunoprophylaxis when CC expressed in humans. The antibodies are used for passive immunisation of therapy to prevent or increase resistance to toxic shock syndrome or therapies. The action of the effects of conditions associated with the effects of conditions associated with the condition
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (AAY97864), where: X1, X8, X13 and X24 are each independently selected from L, I and V; X2,X4, X5, X6, X7, X9, X10, X11, X12, X14, X15, X16, X17, X18, X19, X20, X21, X22 and X23 are each independently selected from the group consisting of any amino acid; X3 are each independently selected from the group consisting of any amino acid; X3, X5 and X26 are each independently selected from the group consisting of any amino acid and of no amino acid; X27 is either L or Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention also relates to serum antibodies induced by the peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                streptococcal pyrogenic toxins. Consensus region 1a (a preferred consensus region 1) has the sequence x25-x26-Y-G-G-X1-T-X2-X3-X4-X5-N (AAX97863) and consensus region 2) has the sequence K-X6-X7-X8-the sequence K-X6-X7-X8-X1-X15-X16-X-X17-X18-X27-X19-X20-X21-X22-X23-X24-Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to novel peptides (AAY97838-Y97843) consensus amino acid sequence derived from two conserved re (regions 1 and 2) of Staphylococcus aureus enterotoxins and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 4; Page 88; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peptides useful for preventing and reducing the symptoms of toxic shock syndrome and septic shock from staphylococcal and streptococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-303782/26.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               07-OCT-1998;
18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pyrogenic exotoxin; enterotoxin; streptococcal infection; staphylococcal infection; septic shock; toxic shock; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200020598-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Staphylococcal/streptococcal pyrogenic toxin-derived peptide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ď,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Visvanathan K, Zabriskie JB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-0168303
99US-0335581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US22180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Group
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (AAY97838-Y97843) comprising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              regions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6347
```

presence of staphylococcal or streptococcal pyrogenic toxins.

```
88888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Streptococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mononuclear cell; blastogenesis; inhibitor; HIV; replication; therapy; staphylococcal enterotoxin; human immunodeficiency virus; T cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid sequences of the peptides are sufficiently common that they can be used for eliciting antibodies which are cross-reactive with toxins derived from various bacteria. Sequences AAY97838-Y978343 represent the synthetic peptides based on consensus regions 1 and 2 of Staphylococcus aureus and Group A streptococcal pyrogenic toxins. These peptides can be administered to a mammal to raise serum antibodies for protection against or amelioration of toxic or septic shock.
                                              The peptide, nucleic acid encoding the peptide and antibody (Ab) produced against the peptide are useful for inhibiting blastogenesis of mononuclear cells (eg. T cells) in the presence of human immunodeficiency virus (HIV), inhibiting HIV replication and protecting a mammal against the deleterious effects of HIV. The peptide is also used to ameliorate the effects of autoimmune diseases associated with the presence of HIV. The Ab is used for passively immunising a mammal against the deleterious
                                                                                                                                                                                                                                                               Providing protection against, and reducing the severity of, human immunodeficiency virus infections and associated deleterious effeusing peptides from homologous sequences of staphylococcal and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Staphylococcus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            streptococcal pyrogenic exotoxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY72180
                                                                                                                                                                                                                                                                                                                                                                                                                         18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200078790-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peptide #6347, derived from streptococcal and staphylococcal toxins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY72180 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
   Sequence
                                                                                                                                                           exotoxin.
                                                                                                                                                                        sequences of staphylococcal enterotoxin and streptococcal pyrogenic
                                                                                                                                                                                       The present sequence is peptide #6347, derived from the homologous
                                                                                                                                                                                                                       Claim
                                                                                                                                                                                                                                                    streptococcal toxins
                                                                                                                                                                                                                                                                                                                                                           Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                         (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-JUN-2000; 2000WO-US16680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                              2001-080820/09.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cmyggvtehegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               =
=
=
=
                                                                                                                                                                                                                    5; Page 38; 76pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36
   36 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0336627
                                                                                                                                                                                                                                                                                                                                                            Zabriskie JB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        90.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             autoimmune disease; immunisation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          00024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                               effects,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                          The present invention describes peptides having consensus sequences #1 (cc or #2, optionally as part of a larger molecule of size at least 6-8 kD. (cc where consensus sequence #1 and #2 are: X25X26YGGXIXX2X3X4X5N #1, cc XXXXX8Y9X10X11X1XX13DX14X15X16RX17X18X27X19X20X21X22X3X24Y #2, where XX 1, X8, X13 and X24 = L, I or V; X3, X25 and X26 = any amino acid (aa) (can be used to generate serum antibodies (Ab) that bind at least one staphylococcal enterotoxin (SE) or streptococcal endotoxin (SPE). Ab (can be used to generate serum antibodies (Ab) that bind at least one consecuted in for diagnostic detection of SPEA or SEA, SEB and SED, in cusual immunoassays; (ii) to inhibit blastogenesis of human mononuclear cells in presence of these toxins (i.e. to protect against or alleviate toxic shock or autoimmune disease associated with bacterial infections); and (iii) for passive immunisation against effects of the toxins. The peptides generate Ab that are cross-reactive with toxins from a variety of bacteria. The present sequence represents a specifically claimed or cample of a peptide of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                              New peptides that generate antibodies against staphylococcal and streptococcal toxins - used to diagnose, treat or prevent toxic shock and autoimmune diseases
                                                                                                                                                                                                                                                                                                Claim 4; Page 54; 69pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Toxic shock syndrome; immunogenic response; bacterial infection; staphylococcal enterotoxin; streptococcal pyrogenic toxin; antib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Peptide #6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW72427;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW72427 standard;
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                           Bannan JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-OCT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO9845325-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UYRQ ) UNIV ROCKEFELLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cmyggvtehegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
   38
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for reducing symptoms of toxic shock syndrome
                                                                                                                                                                                                                                                                                                                                                                                                                           Zabriskie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97US-0838413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98WO-US06663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90.18;
91.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 64;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   00024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>,,</u>
```

Š

1 CMYGGVTLHEGN 12

Query Match
Best Local S
Matches 11

Similarity

90.1%;

Score 64; Pred. No.

DB 19;).00025;

Length 38; Indels

0

Gaps

0

Conservative

0;

Mismatches

밁

cmyggvtehegn

```
which provide protection against, or reduce the severity of toxic shock and septic shock caused by the staphylococcal and streptococcal pyrogenic toxins. The pyrogenic exotoxins of Group A streptococcal and the enterotoxins of Staphylococcus aureus (which are also pyrogenic exotoxins) constitute a family of structurally related toxins which share similar biological activities. They stimulate CD4+, CD8+ and gamma-delta+ T-cells by binding the beta-chain variable region (V-beta) elements on the lateral face of the T-cell receptor (TCR) while simultaneously binding the lateral face of the class II major histocompatibility complex (MHC) of antigen presenting cells. This causes aberrant proliferation of T-cells, which stimulates other components of the immune system, causing injury to the host. The peptides are used to prevent, treat or protect against toxic shock and septic shock resulting from bacterial infections in mammals, particularly humans. The peptides are used for inducing serum antibodies that hind at least toxic shock resulting are used for inducing serum antibodies.
                                                                                                                                                                                                                              x3, X5 and X26 are each independent of any amino acid and of no amino acid; of any amino acid and of no amino acid; X27 is either L or Y.

The invention also relates to serum antibodies induced by the invention also relates to serum antibodies induced by
                                                                                                                                                                                                                                                                                                                            The invention relates to novel peptides (AAY97838-Y97843) comprising consensus amino acid sequence derived from two conserved regions (regions 1 and 2) of Staphylococcus aureus enterotoxins and
                                                                                                                                                                                                                                                                                            the group consisting of any amino acid;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 4; Page 88; 115pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peptides useful for preventing syndrome and septic shock from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2000-303782/26.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-OCT-1998;
18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (UYRQ ) UNIV ROCKEFELLER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200020598-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Staphylococcus aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pyrogenic exotoxin; enterotoxin; streptococcal infection; staphylococcal infection; septic shock; toxic shock; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Staphylococcal/streptococcal pyrogenic toxin-derived peptide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-AUG-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY97843 standard; peptide; 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Visvanathan K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0168303
99US-0335581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US22180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'Group A'
 serum antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zabriskie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and reducing the symptoms of toxic shock staphylococcal and streptococcal
that bind at least one
                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                               peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6348
```

```
RESULT
AAY72181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 11
                                                                                                                                          Providing protection against, and reducing the severity of, human immunodeficiency virus infections and associated deleterious effeusing peptides from homologous sequences of staphylococcal and
                                                                                          Claim 5; Page
                                                                                                                                                                                                                       WPT; 2001-080820/09.
                                                                                                                                                                                                                                                                                                                                                                   16-JUN-2000; 2000WO-US16680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Staphylococcus sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mononuclear cell; blastogenesis; inhibitor; HIV; replication; therapy; staphylococcal enterotoxin; human immunodeficiency virus; T cell; streptococcal pyrogenic exotoxin; autoimmune disease; immunisation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of the peptides can be used in immunotherapy and immunoprophylaxis when expressed in humans. The antibodies are used for passive immunisation therapy to prevent or increase resistance to toxic shock syndrome or septic shock and to ameliorate the effects of conditions associated with the presence of staphylococcal or streptococcal pyrogenic toxins. The amino acid sequences of the peptides are sufficiently common that they can be used for eliciting antibodies which are cross-reactive with toxins derived from various bacteria. Sequences AAY97838-Y978343 represent the synthetic peptides based on consensus consensus regions 1 and 2 of these pentides can be administered to a mammal to refer to a mammal to refer to a mammal to active the toxins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          staphylococcal enterotoxin or streptococcal exotoxin and both the peptides and antibodies can be used in diagnostic assays to aid in the diagnosts of disease related to the presence of bacterial toxins. Nucleic acids encoding a peptide of the invention can be used for the production of the peptides for diagnostic reagents, as vaccines and for theraples for pyrogenic exotoxin related diseases. Vectors expressing high levels of the peptides can be used in immunotherapy and immunoprophylaxis when
                                                                                                                                                                                                                                                                                            (UYRQ ) UNIV ROCKEFELLER.
                                                                                                                                                                                                                                                                                                                                   18-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                          28-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200078790-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY72181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY72181 standard; peptide; 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide #6348, derived from streptococcal and staphylococcal toxins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  These peptides can be administered to a mammal to raise serum ar for protection against or amelioration of toxic or septic shock
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cmyggvtehegn 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   38 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                        38; 76pp; English
                                                                                                                                                                                                                                                                                                                                 99us-0336627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       can be administered to a mammal to raise serum antibodies
                                                                                                                                                                                                                                                         Zabriskie JB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          90.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 64;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 21;
0.00025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    expressing high levels immunoprophylaxis when
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                               effects,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
```

The present sequence is peptide #6348, a cross-linked polymer derived from the homologous sequences of staphylococcal enterotoxin and streptococcal pyrogenic exotoxin.

The peptide, nucleic acid encoding the peptide and antibody (Ab) produce the peptide of the peptide of the peptide of the peptide and antibody (Ab) produce the peptide of the peptide

antibody (Ab) produced

ត្តក្តុក្តុក្តុក្តុក្

В S

```
RESULT 15
ARA13208
ID ARA13208
XX ARA132)
XX Staphy
XX SEC3;
XX SEC3;
XX W09110
XX W09110
XX UFERM,
PF 17-JAN
XX ITERM,
PF 17-JAN
XX UTERM,
PF 17-JAN
XX UTERM,
PF 18-SC(
XX WPI; J
XX UTERM,
PT as St(
XX SEC3 (
CC UTERM,
CC SEC3 (
CC SIGNIC
CC SIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 11; Conser
                                                        Query Match 90.3
Best Local Similarity 83.3
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      against the peptide are useful for inhibiting blastogenesis of mononuclear cells (eg. T cells) in the presence of human immunodeficiency virus (HIV), inhibiting HIV replication and protecting a mammal against the deleterious effects of HIV. The peptide is also used to ameliorate the effects of autoimmune diseases associated with the presence of HIV. The Ab is used for passively immunising a mammal against the deleterious
                                                                                                                                                                                                                                                                             SEC3 was isolated and purified from S.aureus. It can be used for treating cancer, activating cytokine mediators and procoagulant systems, augmenting natural killer cell cytotoxicity, etc. The enterotoxin can be administered intravenously, optionally with ibuprofen to attenuate toxic reaction to SEC3. Synthetic polypeptides having structural homology to Staphylococcal exotoxins are claimed, provided the homology includes statistically significant sequence homology, alignment of Cysteine residues and see AAR13203-R13211.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Staphylococcus aureus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEC3; cancer treatment; pyrogen; tumouricide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Staphylococcal enterotoxin C3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Treating cancer with enterotoxin from Staphylococcus aureus administered by IV injection, having same tumoricidal activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-JAN-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-JAN-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9110680-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-OCT-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR13208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAR13208 standard; Protein; 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               effects of HIV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Fig 1; 74pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1991-237984/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Terman DS;
                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       as Staphylococcal protein A without potential toxic reactions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (TERM/) TERMAN D S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25-JUL-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 cmyggvtehegn 12
1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                     238 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                90US-0466577.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91WO-US00342.
                                                                                      90.1%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     90.1%;
91.7%;
                                                        Score 64; DB
Pred. No. 0.00
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 64; DB 22; Pred. No. 0.00025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                      DB 12;
0.0019;
                                                                                                                    Length 238;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 38;
                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                           0
```

ş

```
밁
 109
cmyggitkhegn 120
```

Search completed: January Job time: 10129 sec 2 2002, 20:48:13

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq
                                                                                                                                                                                                                                                                                                                                                                                                   length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
  BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR_68:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      219241 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          January 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-335-581A-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pir1:*
pir2:*
pir3:*
pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2002, 20:49:24 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           76174552 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98
  NOTE OF THE PROPERTY OF THE PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Search time 56.72 Seconds (without alignments)
16.116 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           219241
                                                                                                                                                                                                                enterotoxin C-1 prenterotoxin C-2 prenterotoxin C-2 prenterotoxin A precenterotoxin B precenterotoxin A precenterotoxin A precurs exotoxin A precurs exotoxin A precurs exotoxin type A prexotoxin type A prexotoxin type A prenterotoxin B precenterotoxin B precenterotoxin D precentero
transcription fact
transcription fact
transposase (09) B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                    Nel-homolog
                                                                                                                                                                                                    protei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Species: Staphylococcus aureus C; Date: 15-Nov-1984 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    enterotoxin C-1 precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ENSAC1
                                                                                                                                                                                                                                                                        A60114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                            137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
```

45	44	43	42	41	40	39	38	37	36	35 5	34	ω	32	31	30
37	37	37	38	38	38	38	3 8	3 8	39	39	3 9	39	3 9	39	39
52.1	52.1	52.1	53.5	53.5	53.5	53.5	53.5	53.5	54.9	54.9	54.9	54.9	54.9	54.9	54.9
295	284	159	1028	871	813	347	347	265	916	805	805	767	198	156	156
Ν	N	N	N	N	N	2	N	N	N	N	N	N	N	2	ν
C83244	H84124	T30926	E85089	C72238	T40622	T35013	T26349	S38380	D83093	T47241	T40739	A35645	S54733	E83683	н83671
conserved hypothet	3-hydroxybutyryl-C	hypothetical prote	probable transposo	preprotein translo	translation elonga	probable membrane	hypothetical prote	Hrox1 protein - Ca	secretion protein	RRM3/PIF1 helicase	rrm3-pif1 helicase	major surface prot	ribosomal protein	transposase (09) B	transposase (09) B

ALIGNMENTS

Staphylococcus aureus

05-Jan-1996 #text_change 18-Jun-1999

```
C;Accession: S06356; A01816
R;Bohach, G.A.; Schlievert, P.M.
Mol. Genet. 209, 15-20, 1987
A;Title: Nucleotide sequence of the staphylococcal enterotoxin C1
A;Reference number: S06356; MUID:88038352
A;Accession: S06356
                      enterotoxin C-2 precursor - Staphylococcus aureus
N;Alternate names: enterotoxin C-3 precursor
C;Species: Staphylococcus aureus
C;Date: 10-Nov-1992 #sequence_revision 10-Nov-1992 #text_change 16-Jul-1999
C;Accession: A60114; B60114; A33866
R;Bohach, G.A.; Schlievert, P.M.
Infect. Immun. 57, 2249-2252, 1989
A;Title: Conservation of the biologically active portions of staphylococcal
A;Reference number: A60114; MUID:89277549
A;Accession: A60114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Gene: entC1
C;Superfamily: enterotoxin B
C;Keywords: enterotoxin
C;Keywords: enterotoxin
F;1-27/Domain: signal sequence #status predicted <SIG>F;28-266/Product: enterotoxin C-1 #status experimental <MAT>F;120-137/Disulfide bonds: #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R;Schmidt, J.J.; Spero, L.
J. Biol. Chem. 258, 6300-6306, 1983
J. Biol. Chem. 258, 6300-6306, 1983
A;Title: The complete amino acid sequence of Staphylococcal enterotoxin C-1.
A;Reference number: A01816, MUID:83213327
A;Accession: A01816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Molecule type: DNA
A;Residues: 1-266 <BOH>
A;Cross_references: EMBL:X05815; NID:g46566; PIDN:CAA29260:1; PID:g46567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein
A; Residues: 28-75, 'IL', 78-176, 'N', 178-266 <SCH>
A; Status: not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CMYGGITKHEGN 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        90.1%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 64; DB 1;
Pred. No. 0.00091;
1; Mismatches 1
                                                                                          active portions of staphylococcal enterotox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene and relatednes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
enterotoxin A precursor - Staphylococcus aureus C;Species: Staphylococcus aureus C;Species: Staphylococcus aureus C;Date: 30-Jun-1989 #seguence_revision 30-Jun-1989 #text_change 15-Oct-19 C;Accession: A28664; A29566 R;Betley, M.J.; Mekalanos, J.J. J. Bacteriol. 170, 34-41, 1988 A;Title: Nucleotide sequence of the type A staphylococcal enterotoxin gen A;Reference number: A28664; MUID:88086892 A;Accession: A28664 A;Molecule type: DNA A;Rocession: A28664 A;Holecule type: DNA A;Roceuse: 1-257 <BET> A;Cross-references: GB:M18970; NID:g153120; PIDN:AAA26681.1; PID:g153121 A,Ecross-references: GB:M18970; NID:g153120; PIDN:AAA26681.1; PID:g153121 A,Ecross-references: GB:M18970; NID:g153120; Schantz, E.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-266 <BOH>
A; Residues: 1-266 <BOH>
A; Recession: B60114
A; Molecule type: protein
A; Residues: 28-66 <BOH2>
A; Molecule type: Protein
A; Residues: 28-66 <BOH2>
A; Molecule type: Betley, M.J.
J. Bacteriol: 171, 4507-4510, 1989
A; Title: Nucleotide sequence of the type C-3 staphylococcal enterotoxin gene suggests: A; Reference number: A33866; MUID:89327174
A; Accession: A33866
A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-266 <COUP
A; Cross-references: GB:M28364; NID:g153003; PIDN:AAA26624.1; PID:g153004
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Residues: \tilde{1}-266 <HOV> A; Cross-references: GB:X51661; NID:g46570; PIDN:CAA35972.1; PID:g46571 C; Superfamily: enterotoxin B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Title: Nucleotide sequence of the staphylococcal enterotoxin C3 A;Reference number: S11885; MUID:90220508
A;Accession: S11885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Gene: entC2
C;Superfamily: enterotoxin B
F;1-27/Domain: signal sequence #status predicted <SIG>F;28-266/Product: enterotoxin C-2 #status predicted <M
                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                              137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CMYGGITKHEGN 148
                                                                                                                                                                                                                                                                                                                                                                                                              CMYGGITKHEGN 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 64; DB Pred. No. 0.00 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 64; DB 2;
Pred. No. 0.00091;
1; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.00091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2
                                                                                                                                                                                                                                                     #text_change 15-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene: sequence compari
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ţ
                                Вþ
```

```
R;Couch, J.L.; Soltis, M.T.; Betley, M.J.
J. Bacteriol. 170, 2954-2960, 1988
A;Title: Cloning and nucleotide sequence of th
A;Reference number: A28179; MUID:88257005
A;Accession: A28179
A;Molecule type: DNA
A;Residues: 1-257 < COUD
A;Cross-references: GB:M21319; NID:g153001; PI
C;Superfamily: enterotoxin B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J. Biol. Chem. 262, 7006-7013, 1987
A;Title: Complete amino acid sequence of staphylococcal enterotoxin A;Reference number: A29566; MUID:87222293
A;Accession: A29566
A;Molecule type: protein
A;Residues: 25-241,'S',243-257 <HUA>
C;Genetics:
                                                                                                                                                                                                       R;Johnson, L.P.; L'Italien, J.J.; Schlievert, P.M. Mol. Gen. Genet. 203, 354-356, 1986
A;Title: Streptocccal pyrogenic exotoxin type A (scarlet fever A;Reference number: A26152; MUID:86284313
A;Accession: A26152
                            Qy
                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-250 <JOH>
C; Superfamily: enterotoxin
C; Keywords: exotoxin
                                                                                                                                                                                                                                                                                                      streptococcal pyrogenic exotoxin type A precursor - Streptococcus sp.
N;Alternate names: scarlet fever toxin; SPE type A (speA)
C;Species: Streptococcus sp.
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              enterotoxin E precursor - Staphylococcus aureus
C;Species: Staphylococcus aureus
C;Date: 30-Jun-1989 #sequence_revision 30-Jun-1989 #text_change 15-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
A28179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Map position: C; Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Accession: A28179
R; Couch, J.L.; Solt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                        C; Accession: A26152
                                                                                                                                                                                                                                                                                                                                                                         A26152
                                                              Matches
                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
128
                                                                                                                                                                                                                                                                                                                                                                                                                                        130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 130
                            1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 CMYGGVTLHEGN 12
CLYGGVTNHEGN 139
                                                                                                                                                                                                                                                                                                                                                                                                                                        CMYGGVTLHDNN 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CMYGGVTLHDNN 141
                                                              10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . Similarity
10; Conser
                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                Conservative
                                                                             85.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       87.3%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             87.3%;
83.3%;
                                                                                                                                                             В
                                                                             Score 61;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 62; D
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       No.
                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PIDN:AAA26617.1; PID:g153002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
0.002;
                                                                                                DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .002;
                                                                               0029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 type
                                                                                            Length 250;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 257;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 257;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ħ
                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 staphylococcal enterotoxin gen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                          toxin) is related
                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,:
                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                            ç
```

```
A; Molecule type: DNA
A; Residues: 1-236 < NEA>
A; Residues: 1-236 < NEA>
A; Cross-references: EMBL: X61562; NID: 947299; PIDN: CAAA3760.1; PID: 947300
A; Cross-references: EMBL: X61562; NID: 947299; PIDN: CAAA3760.1; PID: 947300
A; Experimental source: strain MCAS251 isolate California unassignd phage
A; Note: the nucleotide sequence was submitted to the EMBL Data Library, Septe
A; Status: nucleic acid sequence not shown; translation not shown
A; Molecule type: DNA
A; Residues: 1-236 < NEZ>
A; Cross-references: EMBL: X61563; NID: 947301; PIDN: CAAA3761.1; PID: 947302
A; Experimental source: strain MCAS256 isolate California unassigned phage
A; Mote: the nucleotide sequence was submitted to the EMBL Data Library, Septe
A; Mote: unasside sequence not shown; translation not shown
A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C:Species: Streptococcus pyogenes phage
A:Variety: strain MGAS250 isolate California; strain MGAS251 isolate California isolate California; strain MGAS250 isolate California unassigned phage
A:MCLession: S18787
A:Accession: S18787
A:Cross-references: EMBL:X61561; NID:947297; PIDN:CAA43759.1; PID:947298
A:Cross-references: EMBL:X61561; NID:947297; PIDN:CAA43759.1; PID:947298
A:Accession: S18787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Species: Streptococcus pyogenes
A;Varlety: strain MGAS262 isolate California
C;Date: 29-Jan-1993 #sequence_revision 29-Jan-1993 #text_change
C;Accession: S18789
R;Nelson, K.; Schlievert, P.M.; Selander, R.K.; Musser, J.M.
J. Exp. Med. 174, 1271-1274, 1991
A;Title: Characterization and clonal distribution of four allele A;Reference number: S18782; MUID:92044323
A;Accession: S18789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
S18786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N;Alternate
C;Species: :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   exotoxin type A precursor (allele 2) - Streptococcus pyogenes phage (strain MGAS250
N;Alternate names: scarlet fever toxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N; Alternate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         exotoxin A precursor (allele 4) -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1-22/Domain: signal sequence (fragment) #status predicted <SIG>23-236/Product: exotoxin A (fragment) #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Keywords: exotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Status: nucleic acid sequence not shown; translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120 CIYGGVTNHEGN 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    names: scarlet fever toxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 60; DB Pred. No. 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Streptococcus pyogenes (strain MGAS262 isolate Califor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PIDN:CAA43771.1; PID:g47304
d to the EMBL Data Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2; Length 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .0041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of four alleles of the
                                                                                                                                    cnia unassigned phage
EMBL Data Library, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      September
                                                                                                                                        September 1991
                                                                                                                                                                                                                                                                                                                                                                                                                 September 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      September 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               speA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            enco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               enco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                    A;Residues: 1-236 < A;Cross-references:
                                                         A; Molecule type: DNA A; Residues: 1-236 <N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best
```

```
R;Nelson, K.; Schlievert, P.M.; Selander, R.K.; Musser, J.M.

J. Exp. Med. 174, 1271-1274, 1991

A;Title: Characterization and clonal distribution of four alleles of the speace number: S18782; MUID:92044323

A;Accession: S18783

A;Accession: S18783

A;Status: nucleic acid sequence not shown; translation not shown

A;Molecule type: DNA

A;Residues: 1-236 <NEL>

A;Cross-references: EMBL:X61568; NID:947289; PIDN:CAA43766.1; PID:947290

A;Experimental source: strain MGAS158 isolate Nebraska unassigned phage

A;Note: the nucleotide sequence was submitted to the EMBL Data Library, Septon A;Accession: S18793

A;Status: nucleic acid sequence not shown; translation not shown

A;Accession: S18793

A;Status: nucleic acid sequence not shown; translation not shown

A;Residues: 1-236 <NEA>

A;Residues: 1-236 <NEA

A;Resid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A,Experimental source: EMBL:X61565; NID:g47311; PIDN:CAA43763.1; PID:g47312
A,Experimental source: strain MGAS480 isolate Yugoslavia unassigned phage
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 199
A;Accession: S18795
A;Botaus: nucleic acid sequence not shown. +-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N;Alternate names: scarlet fever toxin C;Species: Streptococcus pyogenes phage control of the first strain MGAS185 isolate Yugoslavia; A;Variety: strain MGAS185 isolate Yugoslavia; C;Date: 29-Jan-1993 #sequence_revision 29-Jan-1993 #text_change 16-Jul-1999 C;Accession: S18783; S18793; S18794; S18801; S18798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:X61564; NID:g47305; PIDN:CAA43762.1; PID:g47306 A;Experimental source: strain MGAS285 isolate Colorado unassigned phage A;Note: the nucleotide sequence was submitted to the EMBL Data Library, & A;Accession: $18792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMBL:X61566; NID:g47317; PIDN:CAA43764.1; PID:g47318
A;Experimental source: strain MGAS492 isolate United Kingdom unassigned phage
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 199
A;Accession: S18799
A; Accession: S18794
A; Status: nucleic ac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Note: the C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: EMBL:X61567; NID:g47325; PIDN:CAA43765.1; PID:g47326
A;Experimental source: strain MGAS496 isolate Germany unassigned phage
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Residues: 1-236 <NEY>
A; Cross-references: EMBl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       exotoxin type A precursor (allele 3) - Streptococcus pyogenes phage (strain N; Alternate names: scarlet fever toxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Keywords: exotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Gene: speA2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-236 <NES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Status: nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-236 <NEH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Status: nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /Domain: signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CIYGGVTNHEGN 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
    acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gnal sequence (fragment) #status predicted
exotoxin type A (fragment) #status predict
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      w
    not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>;</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 60;
Pred. No.
        shown;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
        translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                   PIDN:CAA43767.1; PID:g47314 e Yugoslavia unassigned phage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              predicted
        not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
        shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                  September 199
                                                                                                                                                                                                                                                                                                                                                                   September 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 September 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          speA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MGAS158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          φ
```

<NEZ>

EMBL: X61570;

NID:g47315;

PIDN:CAA43768.1; PID:g47316

```
A; Experimental source: strain MGAS491 isolate United Kingdom unassigned phage
A; Note: the nucleotide sequence was submitted to the EMBL Data Library, September 1991
A; Accession: S18801
A; Status: nucleic acid sequence not shown; translation not shown
A; Molecule type: DNA
A; Residues: 1-236 <NEY>
A; Cross: references: EMBL;X61572; NID:947333; PIDN:CAA43770.1; PID:947334
A; Experimental source: strain MGAS624 isolate Germany unassigned phage
A; Note: the nucleotide sequence was submitted to the EMBL Data Library, September 1991
A; Status: nucleic acid sequence not shown; translation not shown
A; Molecule type: DNA
A; Residues: 1-236 <NEO>
A; Cross: references: EMBL;X61571; NID:947323; PIDN:CAA43769.1; PID:947324
A; Experimental source: strain MGAS495 isolate Germany unassigned phage
A; Mote: the nucleotide sequence was submitted to the EMBL Data Library, September 1991
C;Genetics:
A;Gene: speA3
C;Superiamily: enterotoxin B
C;Keywords: exotoxin
F;1-22/Domain: signal sequence (fragment) #status predicted <MAT>
F;23-236/Product: exotoxin type A (fragment) #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-251 <WEED
A; Cross-references: GB:U40453; EMBL:M19350; NID:g1877426; PIDN:AAC48868.1;
A; Cross-references: GB:U40453; EMBL:M19350; NID:g1877426; PIDN:AAC48868.1;
A; Cross-references: GB:U40453; EMBL:M19350; Musser, J.M.
J. Exp. Med. 174, 1271-1274, 1991
A; Title: Characterization and clonal distribution of four alleles of the sp.
A; Reference number: S18782; MUID:92044323
A; Reference number: S18782
A; Status: nucleic acid sequence not shown; translation not shown
A; Molecule type: DNA
A; Molecule type: DNA
A; Residues: 9-244 <NEL>
A; Cross-references: EMBL:X61560; NID:g47287; PIDN:CAA43758.1; PID:g47288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 exotoxin type A precursor (allele 1) - Streptococcus pyogenes phage T12 N;Alternate names: erythrogenic toxin; scarlet fever toxin C;Species: Streptococcus pyogenes phage T12 C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999 C;Accession: S29659; S18782; S18784; S18785; S18791; S18796; S18797; S18800 R;Weeks, C.R.; Ferretti, J.J. Infect. Immun. 52, 144-150, 1986 A;Reference number: S29659; MUID:86166804 A;Accession: S29659; MUID:86166804
     A;Cross-references: EMBL:X61559; NID:g47293; PIDN:CAA43757.1; PID:g47294
A;Experimental source: Streptococcus pyogenes strain MGAS167 isolate Texas unassigned
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 1991
                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL:X61556; NID:g47291; PIDN:CAA43754.1; PID:g47292
A;Experimental source: Streptococcus pyogenes strain MGAS165 isolate Minnesota unassigne
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 1991
A;Accession: S18785
                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 9-244 <NEZ>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 9-244 < NEA>
                                                                                                                                                                                                                                                                      A;Status: nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Status: nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession: S18784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CIYGGVTNHEGN 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  not shown; translation not shown
                                                                                                                                                                                                                                                                      not shown;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ļ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 60;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                      translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
.0041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 236
                                                                                                                                                                                                                                                                      not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nebraska
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the speA gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                September
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PID:g1877430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unassigned
mber 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     toxin)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           enco
                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-266 < JON>
A; Cross-references: EMBL:MIII18; NID:g152999; PIDN:AAA88550.1; PID:g153000
A; Experimental source: strain S6
R; Huang, I.V.; Bergdoll, M.S.
J. Biol. Chem. 245, 3518-3525, 1970
A; Title: The primary structure of staphylococcal enterotoxin B. III. The call Reference number: A92065; MUID:71007902
A; Reference number: A92065; MUID:71007902
A; Residues: 28-55; NND', 59-68, 'NE', 71, 'FDLIYL', 78-117, 119-127, 'N', 129, 'D', A; Experimental source: strain S-6
B; Molecule type: protein
A; Experimental source: strain S-6
B; Molecule type: protein
A; Experimental source: strain S-6
B; Molecule type: protein
A; Experimental source: strain S-6
B; Molecule type: protein
A; Experimental source: strain S-6
B; Molecule type: protein
A; Experimental source: strain S-6
B; Molecule type: protein
A; Experimental source: strain S-6
B; Molecule type: protein
A; Experimental source: strain S-6
B; Molecule type: protein
A; Experimental source: strain S-6
B; Molecule type: protein
A; Experimental source: strain S-6
B; Molecule type: protein
A; Molecule type: protein
A; Experimental source: strain S-6
B; Molecule type: protein
A; Experimental source: strain S-6
B; Molecule type: protein
A; Molecul
R:Huang, I.Y.; Bergdoll, M.S., J. Biol. Chem. 245, 3511-3517, 1970 A:Title: The primary structure of staphylococcal A;Reference number: A92064; MUID:71007901 A;Contents: annotation; chymotryptic peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Species: Staphylococcus aureus
C;Date: 24-Apr-1984 #sequence_revision 15-Oct-1996
C;Accession: S27360; A92065; S27240; A01815
R;Jones, C.L.; Khan, S.A.
J. Bacteriol. 166, 29-33, 1986
A;Title: Nucleotide sequence of the enterotoxin B g A;Reference number: S27360; MUID:86168029
A;Accession: S27360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: DNA
A; Rolecule type: DNA
A; Residues: 9-244 <NEO>
A; Cross-references: EMBL:X61557; NID:g47319; PIDN:CAA43755.1; PID:g47320
A; Cross-references: EMBL:X61557; NID:g47319; PIDN:CAA43755.1; PID:g47320
A; Experimental source: Streptococcus pyogenes strain MGAS493 isolate France unassigne
A; Note: the nucleotide sequence was submitted to the EMBL Data Library, September 199
A; Accession: S18797
A; Status: nucleic acid sequence not shown; translation not shown
A; Molecule type: DNA
A; Molecule type: DNA
A; Cross-references: EMBL:X61558; NID:g47321; PIDN:CAA43756.1; PID:g47322
A; Note: the nucleotide sequence was submitted to the EMBL Data Library, September 199
A; Accession: S18800
A; Molecule type: DNA
A; Molecule type: DNA
A; Residues: 9-228 <NESS-
A; Cross-references: EMBL:X61554. NID:X67327. BIDN:CAA3753.1; BIDN:CAA3753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
ENSAB6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Keywords: exotoxin
F;1-30/Domain: signal sequence #
F;31-251/Product: exotoxin type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Accession: S18791
A;Status: nucleic acid sequence not shown; translation not shown
A;Status: nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Cross-references: EMBL:x6155; NID:g47309; PIDN:CAA43753.1; PID:g47310
A;Cross-references: EMBL:x61555; NID:g47309; PIDN:CAA43753.1; PID:g47310
A;Experimental source: Streptococcus pyogenes strain MGAS327 isolate Arizona unassign
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 199
A;Accession: S18796
A;Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Gene: speA; speAl C; Superfamily: ente
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: EMBL:X61554; NID:g47327; PIDN:CAA43752.1; PID:g47328 A;Experimental source: Streptococcus pyogenes strain MGAS500 isolate New Zealand unas A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CIYGGVTNHEGN 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B precursor - Staphylococcus aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84.5%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #status predicted e A #status predict
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 60;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               edicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
0.0043;
                                                                                                                   enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     #text_change 18-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 251;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Staphylococcus aureus.
                                                                                                                   ₽.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PID: g153000
                                                                                                                   II. Isolation,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cyanogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                              compos
```

뭥.

Š

```
A;Title: The primary structure of staphylococcal enterotoxin B. I. Isolation, compositic A;Reference number: A92063; MUID:71007900
A;Contents: Bnnotation; tryptic peptides
R;Schantz, E.J.; Roessler, W.G.; Wagman, J.; Spero, L.; Dunnery, D.A.; Bergdoll, M.S.
Blochemistry 4, 1011-1016, 1965
A:Title: Purification of staphylococcal enterotoxin B.
A;Title: Purification of staphylococcal enterotoxin B.
A;Reference number: A90548; MUID:66035792
A;Contents: Bnnotation; biological source of protein
R;Alakhov, V.; Klinsky, E.Y.; Kolosov, M.I.; Maurer-Fogy, I.; Moskaleva, E.Y.; Sveshni R;Alakhov, V.Y.; Klinsky, E.Y.; Kolosov, M.I.; Maurer-Fogy, I.; Moskaleva, E.Y.; Sveshni Eur. J. Blochem. 209, 823-828, 1992
A;Title: Identification of functionally active fragments of staphylococcal enterotoxin B. A;Reference number: S27240; MUID:93049338
preprotein translocase secA - Bacillus subtilis
N;Alternate names: Div protein; secA protein homolog
C;Species: Bacillus subtilis
C;Date: 04-Dec-1992 #sequence_revision 04-Dec-1992 #text_change
C;Accession: JQ0647; S17771; F69704
R;Sadaie, Y: Takamatsu, H.; Nakamura, K.; Yamane, K.
Gene 98, 101-105, 1991
A;Title: Sequencing reveals similarity of the wild-type div+ gen
A;Reference number: JN0145; MUID:91192600
A;Accession: JQ0647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             enterotoxin D precursor - Staphylococcus aureus C;Species: Staphylococcus aureus C;Date: 09-Mar-1990 *sequence_revision 09-Mar-1: C;Accession: A33953 R;Bayles, K.W.; Iandolo, J.J. Bacteriol. 171, 4799-4806, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F:1-27/Domain: signal sequence #status preutures F:28-266/Product: enterotoxin B #status experimental F:120-140/Disulfide bonds: #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A:Molecule type: protein
A:Residues: 28-42:128-148 <ALA>
C:Superfamily: enterotoxin B
C:Keywords: enterotoxin; extracellular protein; toxin
F:1-27/Domain: signal sequence #status predicted <SIG>
F:28-266/Product: enterotoxin B #status experimental <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: GB:M28521; NID:g1492109; PIDN:AAB06195.1; PID:g758691
C;Superfamily: enterotoxin B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-258 <BAY>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Title: Genetic and molecular analyses of A; Reference number: A33953; MUID:89359112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: A33953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Accession: S27240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   140 CMYGGVTEHNGN 151
                                                                                                                                                                                                                                                                                                                                                                             131
                                                                                                                                                                                                                                                                                                13
                                                                                                                                                                                                                                                                                                                                                                                                                               1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                l Similarity
10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bergdoll, M.S.
245, 3493-3510,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81.7%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 58; DB Pred. No. 0.01 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 59; DB 1; Pred. No. 0.0068;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-Mar-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2;
0.01;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene encoding staphylococcal enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 258;
                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                         of Bacillus subtilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                   B48826
```

```
A;Cross-references: EMBL:X62035; NID:y48979; PIDN:CAA43977.1; PID:y48980
A;Cross-references: EMBL:X62035; NID:y48979; PIDN:CAA43977.1; PID:y48980
R;Kunst, F.; Ogassawara, N.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azzevedo, V.; Ber C.; Bron, S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, N.M.; A.; Ehrlich, S.D.; Emmerson, P.T.; Entian, K.D.; Errington, J.; Fabret, C.; Ferrari, Nature 390, 249-256, 1997
A;Authors: Foulger, D.; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Galiech, J.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.; Moetter, P.; Koningstein, G.; Krogh, S.; Kunano, M.; Kurita, K.; Lapidus, A.; Lardino A;Authors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Levine, A.; Liu, H.; Masuda, S.; Mau y, M.; Ogawa, K.; Ogiwara, A.; Oudega, B.; Park, S.H.; Parro, V.; Pohl, T.M.; Masuda, S.; Mau y, M.; Ogawa, K.; Ogiwara, A.; Oudega, B.; Park, S.H.; Parro, V.; Pohl, T.M.; Portete Rieger, M.; Rivolta, C.; Rocha, E.; Roche, B.; Rose, M.; Sadaie, Y.; Sato, T.; Scanl A;Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Se akeuchi, M.; Tamakoshi, A.; Tanaka, T.; Terpstra, P.; Tognoni, A.; Togato, V.; Uchiya T.; Winters, P.; Wipat, A.; Yanamoto, H.; Yamane, K.; Yasumoto, K.; Yata, K.; Yoshida A;Authors: Yoshikawa, H.F.; Zumstein, E.; Yoshikawa, H.; Danchin, A.
A;Title: The complete genome sequence of the Gram-positive bacterium Bacillus subtili A;Reference number: A69380; MUID:98044033
A;Cross-references: GB:M96170; NID:g213501; PIDN:AAA49438.1; PID:g213502 A;Experimental source: orange red variety, embryo A;Note: sequence extracted from NCBI backbone (NCBIN:114769, NCBIP:114770) A;Note: part of this sequence, including the amino end of the mature prote C;Superfamily: astacin; astacin homology.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C:Superfamily: preprotein translocase secA (Keywords: ATP; membrane-associated complex; P-loop; F:100-107/Region: nucleotide-binding motif A (P-loop) F:203-208/Region: nucleotide-binding motif B F:207-210/Region: DEXH motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Residues: 1-841 <SAD>
A;Cross-references: GB:D10279; DDBJ:D90218; NID:g216332; PIDN:BAA01122.1; PID:g216334
A;Experimental source: strain Marburg 168T
R;Overhoff, B.; Klein, M.; Spies, M.; Freudl, R.
Mol. Gen. Genet. 228, 417-423, 1991
Mol. Gen. Genet. 228, 417-423, 1991
                                                                                                                                                                                                                                                                                          R:Yasumasu, S.; Yamada, K.; Akasaka, K.; Mitsunaga, K.; Dev. Biol. 153, 250-258, 1992
A;Title: Isolation of cDNAs for LCE and HCE, two constit A;Reference number: A48826; MUID:93012471
A;Accession: B48826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 high choriolytic hatching proteinase (EC 3.4.24.-) HCE23 precursor - Japanese C;Species: Oryzias latipes (Japanese medaka) C;Date: 01-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: GB:Z99122; GB:ALO09126; NID:g2636029; PIDN:CAB15547.1; PID:g26360 A;Experimental source: strain 168 C;Comment: This pleiotropic protein is required for cell division, sporulation, septa C;Comment: The "nucleotide-binding motif B" and "DEAD motif" features as annotated ar C;Comment to the identified motif and a third conserved motif is approximatly 120-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    wol. Gen. Genet. 228, 417-423, 1991
A;Title: Identification of a gene fragment which codes for the export apparatus in gram-positive and gram-negative bacteria.
A;Reference number: S17771; MUID:91375427
                                                                                                                                                                                                               A; Molecule type: mRNA; protein A; Residues: 1-270 < YAS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Gene: secA; div
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-841 <KUN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-125, / I/, 127-364 < OVE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: preliminary; nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: F69704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            86 LMGGVALHDGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 MYGGVTLHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S1777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B48826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 43; DB Pred. No. 14; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                                                                                                                                                                  constituent proteases of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein transport;
#status atypical
                                            the mature protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                           hatchin
                                                    det
```

```
Search completed: January
Job time: 785 sec
                                                                                                  밁
                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Keywords: glycoprotein; hydrolase; metalloproteinase; zinc F;1-20/Domain: signal sequence #status predicted <STG> F;21-70/Domain: propeptide #status predicted <PROS F;71-270/Product: low choriolytic hatching proteinase #status predicted <MAT> F;88-270/Domain: astacin homology <AST> F:53/Binding site: carbohydrate (Asn) (covalent) #status predicted F;169,173,179,225/Binding site: zinc (His, His, His, Tyr) #status predicted F;170/Active site: Glu #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Yasumasu, S.; Yamada, K.; Akasaka, K.; Mitsunaga, K.; Iuchi, I.; Shimada, H.; Yamagam. Dev. Biol. 153, 250-258, 1992
A;Title: Isolation of cDNAs for LCE and HCE, two constituent proteases of the hatching (A;Reference number: A48826; MUID:93012471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     high choriolytic hatching proteinase (EC 3.4.24.-) HCE21 precursor - Japanese medaka C;Species: Oryvias latipes (Japanese medaka) C;Date: 08-Feb-1996 #sequence_revision 08-Feb-1996 #text_change 03-Dec-1999 C;Accession: C48826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 15
C48826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-279 < YAS>
                                                                                                                                                                              Matches
                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 59.2%;
Best Local Similarity 58.3%;
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Status: not compared with conceptual translation
                                                                                                  170 CMYSGIIQHELN 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             161 CMYSGIIQHELN 172
                                                                                                                       1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 CMYGGVTLHEGN 12
                                                                                                                                                                            Similarity 7; Conserv
                                                                                                                                                                            Conservative
                                                                                                                                                                                             59.2%;
58.3%;
                    2
                    2002, 20:49:25
                                                                                                                                                                      Score 42; DB 2; Pred. No. 7; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 42; DB 2; Pred. No. 6.7; 1; Mismatches
                                                                                                                                                                            4;
                                                                                                                                                                                                               Length 279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 270;
                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps .
                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

burkholderi

saccharomyc human desulfovibr bacillus su

adeno

```
Regult
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match
Maximum Match
Listing first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
2
3
  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B B
                                                                                                                                                                                                                                                       41.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq length: 0 seq length: 2000000000
   o
f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein search,
                                                                                                                                                                                                                                                                                                                                                                                                                                    Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
  $990.1
$900.1
$900.1
$900.1
$900.1
$900.1
$900.1
$900.1
$900.1
$900.1
$900.1
$900.1
$900.1
$900.1
$900.1
$900.1
$900.1
$900.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100059 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 January 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-335-581A-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version
Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             satisfying
                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match 100%
first 45 su
  2002, 20:50:15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         using
                                                                                                                                                                                                                                                                                                                                                                                                                                     DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36664827 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gapext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                chosen
 FIBB_CHICK
ERR1_YEAST
NEL1_HUMAN
NEL1_RAT
SECA_HUMAN
KBF1_MOUSE
RS7_DESMO
PIF1_SCHPO
HEMO_MANE
Y027_BPHP1
SECA_LISMO
Y027_BPHP1
SECA_AQUAE
GUAN_HUMAN
Y125_MYCPN
Y175_MYCPN
ISPE_BACSU
PIF1_YEAST
SECA_SYNP7
Y2R2_DROME
                                                                                                                                                                                                                                                                 ETXD_STAAU
SECA_BACSU
HCE1_ORYLA
HCE2_ORYLA
SECA_CYACA
                                                                                                                                                                                                                                                                                                                                                                     ETC1_STAAU
ETC2_STAAU
ETC3_STAAU
ETXA_STAAU
                                                                                                                                                                                                                                                                                                                                                                                                                                    ij
                                                                                                                                                                                                                                                                                                                                                          ETXE_STAAU
                                                                                                                                                                                                                                                                                                                                ETXB_STAAU
                                                                                                                                                                                                                                                                                                                                              SPEA_STRPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S.E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Search time 37.4 Seconds (without alignments) 11.764 Million cell updates/sec
 P37550
P48459
P07271
Q55357
P16425
                                                                           P13163
P1293
P01552
P01552
P01552
P01553
P31580
P31580
P31581
O19181
O192020
P42222
O62913
O6
                                                                                                                                                                                                                                                                                                                                                                                 P01553
P34071
P23313
                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
                                                            B manduca sex
7 listeria mo
1 bacteriopha
8 aquifex aeo
7 homo sapien
4 mycoplasma
1 mycoplasma
                                                                                                                                                                                                                                                                            staphylococ
bacillus su
oryzias lat
oryzias lat
                                                                                                                                                                                                                                                                                                                                            staphylococ
staphylococ
streptococc
                                                                                                                                                                                                                                                                                                                                                                                 staphylococ
staphylococ
staphylococ
                       bacillus su
caenorhabdi
saccharomyc
                                                                                                                                                   homo sapien
mus musculu
desulfuroco
schizosacch
                                                                                                                                                                                                                homo sapien rattus norv
                                                                                                                                                                                                                                                     cyanidium c
gallus gall
                                                                                                                                                                                                                                                                                                                                staphylococ
synechococc
drosophila
                                                                                                                                                                                                                                          saccharomyc
                                                                                                                                                                                                                                                                  cyanidium
                                                                                                                                                                                                       rhodobacter
                         21-JUL-1986
01-JAN-1990
15-JUL-1999
ENTEROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISULFID CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ETC1_STAAU
P01553;
                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.

MEDLINE-88038352; PubMed-2823067;

Bohach G.A., Schlievert P.M.;

"Nucleotide sequence of the staphylococcal enterotoxin relatedness to other pyrogenic toxins.";

Mol. Genet. 209:15-20(1987).

[2]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacillus/Staphylococcus group; Staphylococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STAAU
                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-83213327; PubMed-6189824; Schmidt J.J., Spero L.; Schmidt J.J., Spero L.; "The complete amino acid sequence of staphylococcal enterotoxin Cl."; J. Biol. Chem. 258:6300-6306(1983).
                                                                                                InterPro; IPR001961; Staph_Strep_toxin.
Pfam; Pf01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                              EMBL; X05815; CAA29260.1; -. PIR; A01816; ENSAC1. PIR; S06356; S06356. HSSP; P34071; ISE2.
                                                                                                                                                                                                                                                                                                                              -1- DISEASE: STAPHYLOCOCCAL ENTERÓTOXINS CAUSE THE INTOXICATION STAPHYLOCOCCAL FOOD POISONING SYNDROME.
-1- SIMILARITY: THE DIFFERENT S. AUREUS ENTEROTOXINS AND S.PYOGENES PYROGENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 28-266.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENTC1
                                                                            SIGNAL
                                                                                        Enterotoxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                266 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Rel. 01, Created)
(Rel. 13, Last sequence update)
(Rel. 38, Last annotation update)
TYPE C-1 PRECURSOR (SEC1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Toxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                      ; Signal;
27
266
137
177
                           30546 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YBPE_BURCE
YUK4_YEAST
SPR6_YEAST
ASTA_ASTFL
PHSS_DESBA
THRC_BACSU
FIBP_ADE15
YIS4_YEAST
YIS4_YEAST
YKK9_CAEEL
GALY_CAMJE
SYV2_RAT
                                                                                    Superantigen.
                          D -> N (IN REF. 2).
; 3A7AB59A8986853B CRC64;
                                                               ENTEROTOXIN TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                               C-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P37336
P42949
Q01684
P07584
P13063
P04990
P36847
P40564
P34286
P13181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                saccharomyc
saccharomyc
astacus flu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              caenorhabdi
saccharomyc
campylobact
rattus norv
```

Query Match

Local

Similarity

90.1%;

Score 64; Pred. No.

0.00061; DB 1;

Length 266;

Mismatches

0,

0;

10;

Conservative

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                       CHAIN
                                                                                                       InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTELTOXIN,
PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                      COMPARISON OF STRUCTURE OF SEA AND SEC2.

MEDLINE=97334373; PubMed=9191070;

Schad E.M., Papageorgiou A.C., Svensson L.A., Acharya K.R.;

"A structural and functional comparison of staphylococcal enterotoxins A and C2 reveals remarkable similarity and dissimilarity.";
                                                                                                                                                                                                                                                                                                                                                                       X-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS).
MEDLINE-96022987; PubMed-7552730;
Swaminathan S., Furey W.F. Jr., Pletche
"Residues defining V beta specificity enterotoxins.";
                                    METAL
METAL
                                                                                                                                                                                                                                                 J. Mol. Biol. 269:270-280(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-FEB-1994 (Rel. 28, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
ENTEROTOXIN TYPE C-2 PRECURSOR (SEC2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STAAU
            METAL
                           METAL
                                                                                    SIGNAL
                                                                                                  Enterotoxin;
                                                                                                                                                                        PDB; 1STE; 23-DEC-96.
PDB; 1SE2; 08-MAR-96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Structure 3:769-779(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Staphylococcus aureus reveals a zinc-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Brehm R.D., Tranter H.S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Papageorgiou A.C., Acharya K.R., Shapiro R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=96027099; PubMed=7582894;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              enterotoxins C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bohach G.A., Schlievert P.M.; "Conservation of the biologically active portions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacillus/Staphylococcus
NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ETC2_STAAU
P34071;
  SEQUENCE
                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                            Nat. Struct. Biol. 2:680-686(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Crystal structure of the superantigen enterotoxin C2 from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Infect. Immun.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=89277549; PubMed=2543637;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              137
                                                                                                                                                                                                                        STAPHYLOCOCCAL FOOD POISONING SYNDROME.
SIMILARITY: THE DIFFERENT S.AUREUS ENTEROTOXINS AND S.PYOGENES
                                                                                                                                                                                                              PYROGENIC EXOTOXINS ARE ALL RELATED
                                                                                                                                                                                               A60114; A60114.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CMYGGITKHEGN 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CMYGGVTLHEGN 12
            28
120
36
110
145
145
                                                                                                  Toxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 and C2.";
57:2249-2252(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
            266
137
36
110
145
149
                                                                                                 Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND SEQUENCE OF
  30604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  group;
  MW.
                                                                                                 Superantigen;
                                                                                                                                                                                                                                                 ENTEROTOXINS CAUSE THE INTOXICATION
                        ZINC.
ZINC.
                                                                         ENTEROTOXIN TYPE C-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Staphylococcus
 8407FB18536FAC08 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                  Pletcher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                266
                                                                                                                                                                                                                                                                                                                                                                                     in
                                                                                                                                                                                                                                                                                                                                                                                  J., Sax M.; staphylococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                 Zinc; 3D-structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Passalacqua
                                                                                                                                                                                                                                                                                                                                                                                                                                                              site.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of staphylococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
```

Q

CMYGGVTLHEGN 12

```
RESULT
ETC3_S1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 10
          Query Match
Best Local Similarity
Matches
                                                          CHAIN
DISULFID
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P23313;
01-NOV-1991
01-NOV-1991
15-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _STAAU
ETC3_STAAU
                                                                                                                                               PDB; 1JCK, 12-NOV-97.
InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
                                                                                                                                                                                                                                     entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                            use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                Fields B.A., Malchiodi E.L., Li H., Ysern X., Schilevert P.M., Karjalainen K., Mariuzza R.A. "Crystal structure of a T-cell receptor beta-c superantigen.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hovde C.J., Hackett S.P., Bohach G.A.;
"Nucleotide sequence of the staphylococcal enterotoxin C3 gene:
sequence comparison of all three type C staphylococcal
enterotoxins.";
                                                                                                PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
Enterotoxin; Toxin; Signal; Superantigen;
SIGNAL 1 27
                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the El
                                                                                                                                                                                                                                                                                                                                                    -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Firmicutes; Bacillus/Clostridium group; Bacillus/Staphylococcus group; Staphylococcus. NCBI_TaxID=1280;
                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                     the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  X-RAY CRYSTALLOGRAPHY (3.5 ANGSTROMS) MEDLINE=97064178; PubMed=8906797;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Staphylococcus aureus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ENTC3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ENTEROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                      Nature 384:188-192(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=90220508; PubMed=2325627;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                 DISEASE: STAPHYLOCOCCAL ENTEROTOXINS CAUSE THE STAPHYLOCOCCAL FOOD POISONING SYNDROME. SIMILARITY: THE DIFFERENT S.AUREUS ENTEROTOXINS
                                                                                                                                                                                                                                                                                                                                     PYROGENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                                S11885;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CMYGGITKHEGN 148
                                                                                                                                                                                                            X51661; CAA35972.1; -.
10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genet. 220:329-333(1990).
                                                           266 AA;
                                                                       28
120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Rel. 20, Created)
(Rel. 20, Last sequence update)
(Rel. 38, Last annotation update)
TYPE C-3 PRECURSOR (SEC3).
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                  S11885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                           266
137
30671
           90.1%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90.1%;
83.3%;
                                                             WW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 64;
Pred. No.
          Score 64;
Pred. No.
                                                                       ENTEROTOXIN TYPE C-3
BY SIMILARITY
                                                              5ED8A32D11FFCA59 CRC64
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                엵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
             0
                                                                                                                                                                                                                                                                                                                                                  ENTEROTOXINS
                                                                                                                                                                                                                                                                        There are no rest
                       DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                              beta-chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
             .00061;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPLEX WITH T-CELL RECEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          00061;
                                                                                                              3D-structure.
                                                                                                                                                                                                                                                              Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                      Stauffacher C.V.,
                        Length 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                           INTOXICATION
                                                                                                                                                                                                                                                                                                                                                                                                              complexed with
                                                                                                                                                                                                                                                              Уď
                                                                                                                                                                                                                                                                                                                                                  AND S.PYOGENES
                                                                                                                                                                                                                                                                                     restrictions
                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                  EMBL
                                                                                                                                                                                                                                                                                                    a collaboration - MBL outstation
0;
                                                                                                                                                                                                                                                                for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                  outstation
                                                                                                                                                                                                                                                                            ij
Gaps
                                                                                                                                                                                                                                                            commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

밁

137

CMYGGITKHEGN 148

```
Abrahmsen L.;
"The Co-crystal structure of staphylococcal enterotoxin type A with En2+ at 2.7-A resolution. Implications for major histocompatibility complex class II binding.";
J. Biol. Chem. 271:32212-32216(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ENIA.
Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacteria; Firmicutes; Bacillus/Clostridium group;
                                                                      STAAU
           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=95354648; PubMed=7628431;
Schad E.M., Zaitseva I., Zaitsev V.N., Dohlsten M.,
Schlievert P.M., Ohlendorf D.H., Svensson L.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Betley M.J., Mekalanos J.J.; "Nucleotide sequence of the type A staphylococcal enterotoxin J. Bacteriol. 170:34-41(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-8722293; PubMed-3584106;
Huang I.-Y., Hughes J.L., Bergdoll M.S., Schantz E.J.;
"Complete amino acid sequence of staphylococcal enterotoxin
J. Biol. Chem. 262:7006-7013(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JAN-1990
15-JUL-1999
                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                               COMPARISON OF STRUCTURE OF SEA AND SEC2.
MEDLINE-97334373; PubMed-9191070;
                                                                                                                                                                                                                                               enterotoxins."
                                                                                                                                                                                                                                                           Swaminathan S., Furey W.F. Jr., Pletch
"Residues defining V beta specificity
                                                                                                                                                                                                                                                                                    MEDLINE-96022987; PubMed-7552730;
                                                                                                                                                                                                                                                                                                                                                                                     Sundstroem M., Hallen D., Svensson A., Schad E.,
                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-97113025; PubMed-8943278;
                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBO J. 14:3292-3301(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 25-257.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=88086892; PubMed=3335483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacillus/Staphylococcus
NCBI_TaxID-1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENTEROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JAN-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P13163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ETXA_STAAU
                                                                                                                                                                                                                                    Nat. Struct. Biol. 2:680-686(1995).
                                                                                                                                                                                                                                                                                                3D-STRUCTURE MODELING.
                                                                                                                                                                                                                                                                                                                                                                                                            K-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Crystal structure of the superantigen staphylococcal enterotoxin
                                                                                                                                                                                                                                                                                                            [5]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ພ
European Bioinformatics Institute. The by non-profit institutions as long
                                                             PYROGENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Rel. 13, Created)
(Rel. 13, Last sequence update)
(Rel. 38, Last annotation update)
TYPE A PRECURSOR (SEA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                           Pletcher ficity in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       257
           There are
                                                                                                                                                                                                                                                           J., Sax M.;
staphylococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3
                                                                                                                                                                                                                                                                                                                                                                                     Dohlsten
 content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kalland
           restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A. ";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene.";
  8 8
its
way
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                  01-JAN-1990
01-JAN-1990
15-JUL-1999
ENTEROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                    LT 5
STAAU
                                                                                                                                                                                                                                                            Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacillus/Staphylococcus group; Staphylococcus.
NCBI_TaxID-1280;
                                                                                                                                                                                                                                                                                                                                                              ETXE_STAAU P12993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; M18970; AAA26681.1; PIR; A28664; A28664.
                                                                                                                 MEDLINE=96022987; PubMed=7552730;
Swaminathan S., Furey W.F. Jr., Pletcher
Residues defining V beta specificity in
                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                 -
                                                                                                          enterotoxins.";
                                                                                                                                                                                    enterotoxin gene
                                                                                                                                                                                                       Couch J.L.,
                                                                                                                                                                                                                                 STRAIN-MJB265
                                                                                                                                                                                                                                         SEQUENCE FROM N.A., AND SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       METAL
                                                                                                                                                    3D-STRUCTURE MODELING
                                                                                                                                                                                              Couch J.L., Soltis M.T., Betley M.J.; "Cloning and nucleotide sequence of t
                                                                                                                                                                                                                    MEDLINE=88257005; PubMed=3384800;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR001961; Staph_Strep_toxin.
                                                                                                                                                                                                                                                                                                                                                                                                                              130 CMYGGVTLHDNN 141
                                                                                                                                                                          Bacteriol. 170:2954-2960(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 CMYGGVTLHEGN
                                                               . Struct. Biol. 2:680-686(1995).
DISEASE: STAPHYLOCOCCAL ENTEROTOXINS CAUSE THE INTOXICATION
STAPHYLOCOCCAL FOOD POISONING SYNDROME.
SIMILARITY: THE DIFFERENT S.AUREUS ENTEROTOXINS AND S.PYOGENES
                                                     PYROGENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1SEA; 15-OCT-95.
1SXT; 19-NOV-97.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A29566; A29566.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                   (Rel. 13, Created)
(Rel. 13, Last sequence up
(Rel. 38, Last annotation
TYPE E PRECURSOR (SEE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25
120
25
211
249
251
242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ã,
                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Signal;
24
257
130
25
211
249
249
251
249
266
                                                                                                                                                                                                                                                                                                                                                                                                                                                   12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   87.3%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29669 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Superantigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 62;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZINC.
ZINC.
ZINC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ENTEROTOXIN TYPE A.
                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -> S (IN REF. 2).
ADEBF5BCA1F14677 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                         257
                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0.0013;
                                                                                                                                                                                               type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                   J., Sax M.; staphylococcal
                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zinc;
                                                                                                                                                                                               Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 257
                                                                                                                                                                                               staphylococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3D-structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

the

European Bioinformatics Institute. The by non-profit institutions as long

There

are its

content

restrictions

(See http://www.isb-sib.ch/announce/

Usage

bу

and for commercial

```
RESULT 6
SPEA_STRPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPEA_STRPY
SPEA_STRPY
P08095;
p08095;
01-AUG-1988 (Rel. 08, Created)
01-JAN-1990 (Rel. 13, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
30-MAY-2010 (Rel. 39, Cast annotation update)
30-MAY-2010 (Rel. 39, Cast annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; M21319; AAA26617.1; -.

PIR; A28179; A28179.

PDB; 1SEE; 15-OCT-95.

InterPro; IPR001961; Staph_Strep_toxin.

Pfam; PF01123; Stap_Strp_toxin; 1.

PRINTS; PR00279; BACTRITOXIN.

PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.

PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                             X-RAY CRYSTALLOGRAPHY (2.57 ANGSTROMS).

MEDLINE-99094887; PubMed-9878045;
Papageorgiou A.C., Collins C.M., Gutman D.M., Kline J.B.,
Papageorgiou A.C., Collins C.M., Gutman D.M., Kline J.B.,
O'Brien S.M., Tranter H.S., Acharya K.R.;
"Structural basis for the recognition of superantigen streptococcal
pyrogenic exotoxin A (SpeA1) by MHC class II molecules and T-cell
                                                                                                                                                                                                                                                     Johnson L.P., L'Italien J.J., Schlievert P.M.; "Streptococcal pyrogenic exotoxin type A (scarlet related to Staphylococcus aureus enterotoxin B."; mol. Gen. Genet. 203:354-356(1986).
                                                                                                                                                                                                                                                                                                               MEDLINE=86284313; PubMed=3526093;
                                                                                                                                                                                                                                                                                                                                                                          (erythrogenic
T12.";
                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE-86166804; PubMed-3514452;
Weeks C.R., Ferretti J.J.;
                                                                                                                                    receptors
                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                    Weeks C.R., Ferretti J.J.;
"Nucleotide sequence of the type A streptococcal exotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Enterotoxin; Toxin; SIGNAL 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CMYGGVTLHEGN 12
MISCELLANEOUS: THIS TOXIN SEEMS TO I SIMILARITY: THE DIFFERENT S.AUREUS I PYROGENIC EXOTOXINS ARE ALL RELATED
                                                       DISEASE: THE STREPTOCOCCAL PYROGENIC TOXINS A, B, AND C ARE THE CANSATIVE AGENTS OF THE SYMPTOMS ASSOCIATED WITH SCARLET FEVER, HAVE BEEN ASSOCIATED WITH STREPTOCOCCAL TOXIC SHOCK-L. DISEASE AND MAY PLAY A ROLE IN THE EARLY EVENTS OF RHEUMATIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CMYGGVTLHDNN 141
                                                                                                                                                                                                                                                                                                                                                          Immun. 52:144-150(1986).
                                                                                                                      18:9-21(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   257 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28
                                                                                                                                                                                                                                                                                                                                N.A.
                                                                                                                                                                                                                                                                                                                                                                                       toxin) gene from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  257
29358 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Signal; Superantigen; 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       87.3%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 62;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENTEROTOXIN TYPE
                                                                                                                                                                                                                                                                                                                                                                                    Streptococcus pyogenes bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27EDA94B97770CE3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
               ENTEROTOXINS
                              BE CODED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .0013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3D-structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 257;
                              BY BACTERIOPHAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (ERYTHROGENIC TOXIN)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Streptococcaceae;
                                                                                                                                                                                                                                                                                   fever toxin)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                AND
                S.PYOGENES
                                                                        SCARLET
SHOCK-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                T12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
```

```
ALD REPORT OF THE PROPERTY OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
ETXB_S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                     P01552;
21-JUL-1986
13-AUG-1987
15-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
DISULFID
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                    Bacteria; Firmicutes; Bu Bacillus/Staphylococcus NCBI_TaxID=1280;
              Ranelli D.M., Jones C.L., Johns M.B., Mussey G.J. "Molecular cloning of staphylococcal enterotoxin Escherichia coli and Staphylococcus aureus."; Proc. Natl. Acad. Sci. U.S.A. 82:5850-5854(1985).
                                                                                        SEQUENCE OF 40-91 FROM N.A. MEDLINE=85298255; PubMed=38
                                                                                                                                                     J. Bacteriol. 166:29-33(1986).
                                                                                                                                                                       aureus.";
                                                                                                                                                                                         "Nucleotide sequence
                                                                                                                                                                                                           SEQUENCE FROM N.A. MEDLINE=86168029; Pub Jones C.L., Khan S.A.
                                                                                                                                                                                                                                                                                                                                                Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                       ENTEROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STAAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PDB; 1BIZ; 24-NOV-99.
InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRITOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1;
PROSITE; PS00278; STAPH_STREP_TOXIN_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; U40453; AAC48868.1;
EMBL; X03929; CAA27568.1;
PIR; A26152; A26152.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restruce by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ETXB_STAAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Toxin; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CIYGGVTNHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S29659; S29659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                   (Rel. 0
(Rel. 0
(Rel. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       251 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                         01,
05,
38,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    139
                                                                                          PubMed=3898073;
                                                                                                                                                                                                                               PubMed=3957869;
                                                                                                                                                                                                                                                                                                                                                                                       PRECURSOR (SEB).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    251
128
128
18
18
18
35
40
59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84.5%;
                                                                                                                                                                                       of the enterotoxin
                                                                                                                                                                                                                                                                                                        Bacillus/Clostridium grous group; Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , WM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 60; UB.
Pred. No. 0.00

1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NLQNIYFLYEGDP
REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SQEVFAQQDPD -> LPKGICSTRPK H -> Q (IN REF. 2). S -> N (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TNKKMVTAQELDYK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EXOTOXIN TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          54001FE4CCCBFCC3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ٠,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    > Q (IN REF. 2
> N (IN REF. 2
NIYFLYEGDP ->
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ΧX
                                                                                                                                                                                                                                                                                                                                                                                                       on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     266 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
0./
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (IN REF.
                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .0028;
                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                            group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 2).
2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 2).
-> QIKNGNCSRISYT
                                                                          G.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TEKIYIFFMRVTL
                                                                                                                                                                                         from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 251;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRC64
                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                      gene
                                                                                                                                                                                         Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          restrictions
                                                    S.A.;
in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
SIGNAL
CHAIN
DISULFID
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-98181012; PubMed-9514739;
Papageorgiou A.C., Tranter H.S., Acharya K.R.;
"Crystal structure of microbial superantigen staphylococcal enterotoxin B at 1.5-A resolution: implications for superan recognition by MHC class II molecules and T-cell receptors.

J. Mol. Biol. 277:61-79(1998).

--- DISCASE: STAPHYLOCOCCAL FOOD POISONING SYNDROME.

--- SIMILARITY: THE DIFFERENT S.AUREUS ENTEROTOXINS AND S.P. PYROGENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                                                                                                                     PIR;
                                                                                                                                                                                                                                                                                                                                          the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-94203282; PubMed-8152483;
Jardetzky T.S., Brown J.H., Gorga J.C., Stern L.J., Urban R.G.,
Chi Y.I., Stauffacher C., Strominger J.L., Wiley D.C.;
"Three-dimensional structure of a human class II histocompatibility
molecule complexed with superantigen.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Huang I.-Y., Bergdoll M.S.;
"The primary structure of staphylococcal enterotoxin B. cyanogen bromide peptides of reduced and aminoethylated B, and the complete amino acid sequence.";
J. Blol. Chem. 245:3518-3525(1970).
                                                                                                                            InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE: PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE: PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Three-dimensional structure of the complex between a T cell receptor beta chain and the superantigen staphylococcal enterotoxin B."; Immunity 9:807-816(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X-RAY CRYSTALLOGRAPHY (2.4 ANGSTROMS)
MEDLINE-99096298; PubMed-9881971;
Li H., Liera A., Tsuchiya D., Leder L.
Karjalainen K., Mariuzza R.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).

MEDLINE-93063291; pubMed-143005;
Swaminathan S., Furey W.F. Jr., Pletcher
"Crystal structure of staphylococcal ente
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       X-RAY CRYSTALLOGRAPHY (1.5 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature
[6]
                                                                                                                Enterotoxin;
                                                                                                                                                                                                                                                                                                                                                                                                                   between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    X-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nature 359:801-806(1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-71007902; PubMed-5470821;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 28-266 (S-6).
                                                                                                                                                                                                 1SEB; 20-JUN-96.

2SEB; 28-JAN-98.

3SEB; 27-MAY-97.

1SE3; 16-JUN-97.

1SE4; 15-OCT-97.

1SBB; 04-MAR-99.
                                                                                                                                                                                                                                                                                     L; M11118; AAA8855; A01815; ENSAB6.; S27360; S27360.
                                                                                                                                                                                                                                                                                                                                                                                                                   SWISS-PROT entry is copyright. It is produced through a een the Swiss Institute of Bioinformatics and the EMBI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  368:711-718(1994).
 120
120
120
118
118
133
                                                                                                                   Toxin;
                                                                                                                                                                                                                                                                                                                 AAA88550.1;
 266
140
58
77
118
130
                                                                                                  Signal;
27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          D., Leder L.,
DDN -> NND (IN RE
DQFLYFDLI -> NEFF
MISSING (IN REF.
DIN -> NID (IN RE
QTD -> ENT (IN RE
                                                                                                                Superantigen;
                                                                                     ENTEROTOXIN TYPE
                                                        NND (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OF COMPLEX WITH TCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ysern X.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPLEX WITH
                                         NEFFDLIYL
                                                                                                                 3D-structure
 REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sax
                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for superantigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₩.
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Schlievert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INTOXICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ø
                                          (IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            superantigen.";
                                             REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . PYOGENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The
                                                                                                                                                                                                                                                                                                                                                                                                                      collaboration -
                                            <u>س</u>
.
                                                                                                                                                                                                                                                                                                                                                                                                                    outstation
```

```
THE TENERS OF SOME THE TENERS OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Best L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P20723;
01-FEB-1991
01-FEB-1991
15-JUL-1999
SIGNAL
CHAIN
METAL
METAL
                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.,
STRAIN=ATCC 23235;
MEDLINE=97157473; Pu
                                                                                                                                             EMBL; M28521; AAB06195.1; -.
PRI; A33953; A33953.
HSSP; P13163; ISXT.
InterPro; IPR001961; Staph_Strepfam; PF01123; Stap_Strp_toxin;
PRINTS; PR00279; BACTRLTOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "The crystal structure of staphylococcal Zn2+-mediated homodimerization."; EMBO J. 15:6832-6840(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STAAU
                                                                                   Enterotoxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <del>:</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -!- SUBUNIT: HOMODIMER; ZINC-DEPENDENT.
-!- DISEASE: STAPHYLOCOCCAL ENTEROTOXINS CAUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dohlsten M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sundstroem M., Abrahmsen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              enterotoxin D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bayles K.W., Iandolo J.J.; "Genetic and molecular analyses of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. MEDLINE=89359112; PubMed=2549000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacillus/Staphylococcus
NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Staphylococcus aureus. Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ETXD_STAAU
                                                                                                   PROSITE: PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteriol. 171:4799-4806(1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 CMYGGVTLHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STAPHYLOCOCCAL FOOD POISONING SYNDROME. SIMILARITY: THE DIFFERENT S.AUREUS ENTEROTOXINS AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PYROGENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CMYGGVTEHNGN 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 149
156
185
233
                                                                                   Toxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Iandolo J.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           150
156
186
233
247
247
31436.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PubMed=9003758;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17, Created)
17, Last sequence up
38, Last annotation
; Signal;
25
258
212
250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRECURSOR (SED).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AND X-RAY CRYSTALLOGRAPHY
                                                                                                                                                                     Staph_Strep_toxin.
Strp_toxin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       83.1%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacillus/Clostridium group; us group; Staphylococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŗ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NG -> GN (IN REF. 3).
Y -> YY (IN REF. 3).
QE -> EQ (IN REF. 3).
D -> N (IN REF. 3).
DN -> ND (IN REF. 3).
                                                                                   Superantigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 59; DB 1;
Pred. No. 0.0044;
ENTEROTOXIN TYPE D. ZINC. ZINC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Antonsson P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B6D417F61CF018B0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        enterotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mehindate K., Mourad W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (2.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INTOXICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  staphylococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S. PYOGENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        D reveals
                                                                                                                                                                                                                                                                                                                                                                                                             a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
SECOLLY
SECOLLY
ID CARRES
OLD DIT OLD 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Overhoff B., Klein M., Spies M., Freudl R.;

"Identification of a gene fragment which codes for the 364 aminoterminal amino acid residues of a SecA homologue from Bacillus subtilis: further evidence for the conservation of the protein export apparatus in gram-positive and gram-negative bacteria.";

MOI. Gen. Genet. 228:417-423(1991).

-i- FUNCTION: INVOLVED IN PROTEIN EXPORT. INTERACTS WITH THE SECY/SECE SUBUNITS. SECA HAS A CENTRAL ROLE IN COUPLING THE HYDROLYSIS OF RE-SUCRETORY PERIPLASMIC AND OUTER MEMBRANE PROTEINS ACROSS THE MEMBRANE.

-i- SUBUNIT: PART OF THE PROKARYOTIC PROTEIN TRANSLOCATION APPARATUS WHICH COMPRISE SECA, SECB, SECD, SECE, SECF, SECG AND SECY WHICH COMPRISE SECA, SECB, SECD, SECE, SECF, SECG AND SECY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Sequencing reveals similarity of the wild-type subtilis to the Escherichia coli secA gene."; Gene 98:101-105(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     METAL
VARIANT
                                                                                                                                                           the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 1-364 FROM N.A. STRAIN-ATCC 6057; MEDLINE=91375427; PubMed=1832735;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-168 / MARBURG;
MEDLINE-91192600; PubMed-1901557;
Sadaie Y., Takamatsu H., Nakamura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacillus subtilis.
Bacteria; Firmicutes; Ba
Bacillus/Staphylococcus
NCBI_TaxID=1423;
                                                                                                                                       or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Soldo B., Lazarevic V.,
Submitted (JAN-1997) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SECA OR DIV+
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-DEC-1992 (Rel. 24, Created)
01-DEC-1992 (Rel. 24, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation updat
PREPROTEIN TRANSLOCASE SECA SUBUNIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-DEC-1992
01-DEC-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SECA_BACSU
P28366;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BACSU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: BELONGS TO THE SECA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                   SUBCELLULAR LOCATION: CYTOPLASMIC SIDE OF
                                                                                                                                                                                                                                                                                                                                                                                               CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                   (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTYGGVTPHEGN 142
                                                            U56901;
                                                                                      D10279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            252
114
258 AA;
; BAA01122.1; -.; AAC44957.1; -.; CAA43977.1; -.; CAB15547.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              252
114
29746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacillus/Clostridium us group; Bacillus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mauel C., Karamata D.;
the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 58; DB 1;
Pred. No. 0.0063;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -> A (IN STRAIN ATCC 23235).
4F7C6A28D42597FD.CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                      MEMBRANE, AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          div+ gene of Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                      collaboration
                                                                                                                                                                                                                                                                            outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
```

```
RESULT ID TO SEE THE S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yasumasu S., Yamada K., Akasaka K., Mitsunaga K., Iuchi I., Shimada H., Yamagami K.; Isolation of cDNAs for LCE and HCE, two constituent proteases of the "Isolation of Oryzias latipes, and concurrent expression of their mRNAs during development."; Dev. Biol. 133:250-258(1992).

-i- FUNCTION: PARTICIPATES IN THE BREAKDOWN OF THE EGG ENVELOPE, WHICH IS DERIVED FROM THE EGG EXTRACELLULAR MATRIX, AT THE TIME OF HATCHING. THUS ALLOWING THE NEWLY HATCHED FISH TO SWIM FREE. HCE BINDS TIGHTLY TO THE EGG ENVELOPE WHILE IT EXERTS THE CHORIOLYTIC SWELLING ACTION.

-i- CATALYTIC ACTIVITY: HYDROLYSIS OF THE INNER LAYER OF FISH EGG ENVELOPE. ALSO HYDROLYSIS CASEIN AND SMALL MOLECULE SUBSTRATES STICH EGG ENVELOPE. ALSO HYDROLYSIS CASEIN AND SMALL MOLECULE SUBSTRATES
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE=Embryo;
MEDLINE=93012471;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Oryzias latipes (Medaka fish).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Actinopterygii; Meopterygii; Teleostei; Euteleostei; Neoteleostei;

Acanthomorpha; Acanthopterygii; Percomorpha; Atherinomorpha;

Beloniformes; Adrianichthyldae; Oryzinae; Oryzias.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HCE1_ORYLA STANDARD; PRT; 270 AA.

P31580;
01-JUL-1993 (Rel. 26, Created)
01-JUL-1993 (Rel. 26, Last sequence update)
01-NOV-1995 (Rel. 32, Last annotation update)
HIGH CHORIOLYTIC ENZYME 1 PRECURSOR (EC 3.4.24.67) (HATCHING ENZYME ZINC-PROTEASE HCE 1 SUBUNIT) (CHORIOLYSIN H 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORYLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PR00906; SECA.
PROSITE; PS01312; SECA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A., AND SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Protein transport; ATP-binding; Membrane; Translocation; Transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF01043; SecA_protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SubtiList;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86
                                                                                                                                                                                                         2 TO DAY 3 EMBRYOS AND INCREASES THEREAFTER UNTIL HATCHING. PTW: O-GLYCOSYLATED (PROBABLE).
MISCELLANEOUS: IN MEDAKA THE HATCHING ENZYME SYSTEM IS COMPOSED TWO DISTINCT PROTEASES, THE HIGH CHORIOLYTIC ENZYME (HCE), OF WHICH THERE ARE TWO ISOFORMS, AND THE LOW CHORIOLYTIC ENZYME
                                                                                                                                                                                                                                                                                                                                                                                                                          SUCH AS SUC-LEU-LEU-VAL-TYR-|-MCA. COFACTOR: BINDS ONE ZINC ION. SUBCELLULAR LOCATION: STORED AS PR
                                                                                                           SIMILARITY: BELONGS TO PEPTIDASE FAMILY M12A (ZINC METALLOPROTEASE); ALSO KNOWN AS THE ASTACIN SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                 DEVELOPMENTAL STAGE: PRODUCTION OF THE PROTEIN STARTS IN DAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LMGGVALHDGN 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JQ0647; JQ0647.
S17771; S17771.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR000185; SecA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100
126
841 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG10741;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PubMed=1397682;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      107
126
v
95530 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATP (POTENTIAL).
V -> I (IN REF. 3); 9AAC3630139F5EFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                             AS PROENZYMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71-119 AND 208-223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
7.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
.
                                                                                                                                                                                                                                                                                                                                                                                                                             IN THE ZYMOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                            OF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

٠.

as its content

ST

in

no

way

```
RESULT
HCE2_OI
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 7
      Thatching enzyme of Oryzlas latipes, and concurrent expression of the their mrnas during development.";

Dev. Blol. 153:250-258(1992).

C --- FUNCTION: PARTICIPATES.IN THE BREAKDOWN OF THE EGG ENVELOPE, WHICH IS DERIVED FROM THE EGG EXTRACELLULAR MATRIX, AT THE TIME OF HATCHING. THUS ALLOWING THE NEWLY HATCHED FISH TO SWIM FREE.

C OF HATCHING. THUS ALLOWING THE NEWLY HATCHED FISH TO SWIM FREE.

C HCE BINDS TIGHTLY TO THE EGG ENVELOPE WHILE IT EXERTS THE CHORIOLYTIC SWELLING ACTION.

C --- CATALYTIC ACTIVITY: HYDROLYSIS OF THE INNER LAYER OF FISH EGG ENVELOPE. ALSO HYDROLYSES CASEIN AND SMALL MOLECULE SUBSTRATES C SUCH AS SUC-LEU-LEU-TAL-TYR-I-MCA.

C --- SUBCELLULAR LOCATION: STORED AS PROENZYMES IN THE ZYMOGEN
                                                                                                                                                                                                                                                                                                                                                                                             HCE2_ORYLA STANDAKU;
P31581;
P31581;
01-JUL-1993 (Rel. 26, Created)
01-JUL-1993 (Rel. 26, Last sequence update)
01-NOV-1995 (Rel. 32, Last annotation update)
01-NOV-1995 (Rel. 32, Last annotation update)
HIGH CHORIOLYTIC ENZYME 2 PRECURSOR (EC 3.4.24.67)
HIGH CHORIOLYTIC ENZYME 2 (CHORIOLYSIN H 2).
                                                                                                                                                                                                TISSUE-Embryo;
MEDLINE-93012471; PubMed-1397682;
MEDLINE-93012471; PubMed-1397682;
Yasumasu S., Yamada K., Akasaka K., K
Shimada H., Yamagami K.;
"Isolation of cDNAs for LCE and HCE,
                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleos Actinopterygil; Neopterygil; Teleostei; Euteleostei; Neotele Acanthomorpha; Acanthopterygil; Percomorpha; Atherinomorpha; Beloniformes; Adrianichthyidae; Oryzinae; Oryzias. NCBI_TaxID-8090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORYLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SMART; SMO0235; ZnMC; 1.
SMART; SMO0235; ZNMC; 1.
PROSTTE; PS00142; ZINC_PROTEASE; 1.
PROSTTE; PS00142; ZINC_PROTEASE; Zinc; Glycoprotein; Zymogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      use by non-profit institutions as long a modified and this statement is not removed. entitles requires a license agreement (See lor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  METAL
                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                Oryzias latipes (Medaka fish).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROPER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRINTS; PRO0480; ASTACIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001506; Astacin.
InterPro; IPR000130; Zn_MTpeptdse.
Pfam; PF01400; Astacin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEROPS; M12.007;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       161 CMYSGIIQHELN 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B48826; B48826.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          м96170;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1
21
71
169
170
173
173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1IAD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAA49438.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
270
270
169
170
173
173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30392 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HIGH CHORIOLYTIC ENZYME 1.
ZINC (CATALYTIC) (BY SIMILARITY).
BY SIMILARITY.
ZINC (CATALYTIC) (BY SIMILARITY).
ZINC (CATALYTIC) (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTENTIAL).
M; D85C972906E3735A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 42; DB Pred. No. 3.8; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACTIVATION PEPTIDE
                                                                                                                                                                                                                                Mitsunaga K.,
                                                                                                                                                                                                   two constituent proteases of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .
8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Usage
                                                     R LAYER OF FISH EGG
MOLECULE SUBSTRATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 270
                                                                                                                                                                                                                               Iuchi
                                                                                                                                                                                                                                                                                                                                                                                                                         (HATCHING
                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
; Neoteleostei;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                      SUBSTRATES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                         ENZYME
                                                                                                               E TIME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
```

```
CCCCP PRASS SOOO OCCOP 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 $\frac{1}{2} \frac{1}{2} \frac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SECA_CYACA
019911;
15-JUL-1998
genome.";
J. Mol. Evol. 51:382-390(2000).

-IFUNCTION: INVOLVED IN PROTEIN EXPORT AND IN-
CENTRAL ROLE IN COUPLING THE HYDROLYSIS OF
PRE-SECRETORY PROTEINS ACROSS THE MEMBRANE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SECA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACT_SITE
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <del>.</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <del>-</del> --
                                                                                                                                                                                         MEDLINE=20496959; PubMed=11040290; Gloeckner G., Rosenthal A., Valentin
                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota;
Cyanidium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cyanidium caldarium. Chloroplast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation updat
PREPROTEIN TRANSLOCASE SECA SUBUNIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CYACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEROPS; M12.007; -.
InterPro; IPR001506; Astacin.
InterPro; IPR000130; Zn_MTpeptdse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; M96171; AAA49439.1; -. HSSP; P07584; 1IAD.
                                                                                                                                                                                                                                                               STRAIN-RK-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SMART; SMUU433; 4..... - PROTEASE; 1.
PROSTTE; PS00142; ZINC_PROTEASE; 1.
YOLANIA TOTOLEASE; Zinc; Glycoprotein; Zymogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRINTS; PR00480; ASTAC
SMART; SM00235; ZnMc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF01400; Astacin;
                                                                                                                                                                  "The structure and
                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=2771;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          170 CMYSGIIQHELN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CMYGGVTLHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PTM: O-GLYCOSYLATED (PROBABLE).
MISCELLANEOUS: IN MEDAKA THE HATCHING ENZYME SYSTEM
TWO DISTINCT PROTEASES, THE HIGH CHORIOLYTIC ENZYME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEVELOPMENTAL STAGE: PRODUCTION OF THE PROTEIN STARTS IN DAY 2 TO DAY 3 EMBRYOS AND INCREASES THEREAFTER UNTIL HATCHING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           METALLOPROTEASE); ALSO KNOWN AS THE ASTACIN SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY: BELONGS TO PEPTIDASE FAMILY M12A (ZINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WHICH THERE ARE TWO ISOFORMS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
7; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                        Rhodophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21
80
178
179
182
188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20
79
279
178
179
182
188
62
31490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ASTACIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12
                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   59.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                 Bangiophyceae;
                                                                                                                                                                  repertoire
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HIGH CHORIOLYTIC ENZYME 2.

ZINC (CATALYTIC) (BY SIMILARITY).

BY SIMILARITY.

ZINC (CATALYTIC) (BY SIMILARITY).

ZINC (CATALYTIC) (BY SIMILARITY).

ZINC (CATALYTIC) (BY SIMILARITY).

N-LINKED (GLCNAC. . .) (POTENTIAL).

MW; 00244107A8B01B8C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 42; DB Pred. No. 3.9; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTIVATION PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AND
                                                                                                                                                                  of
                                                                                                                                                               K.;
fan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              895
                                                                                                                                                                                                                                                                                                                                                                                                                        Porphyridiales; Porphyridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THE LOW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            , 9
8d
                                                                                                                                                                  ancient
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۲.
                                    D IMPORT. S
OF ATP TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHORIOLYTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 279
                                                                                                                                                                  red
                                       SECA HAS
                                                                                                                                                           algal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IS COMPOSED (HCE), OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Signal
                                       TRANSFER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ENZYME
                                                                                                                                                               plastid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                       ဝှု
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     읶
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
RESULT
FIBB_CI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                    Biochemistry 30:3290-3294(1991).
-!- FUNCTION: FIBRINGEN HAS A DOUBLE FUNCTION: YIELDING MONOMERS POLYMERIZE INTO FIBRIN AND ACTING AS A COFACTOR IN PLATELET
                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A., AND SEQUENCE OF 1-13 AND 18-39 MEDLINE=91182745; PubMed=2009266; Weissbach L., Oddoux C., Procyk R., Grieninger G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FGB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-JUL-1993 (Rel. 26, Created)
01-JUL-1993 (Rel. 26, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation updat
FIBRINOGEN BETA CHAIN PRECURSOR (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Protein transport; ATP-binding; Chloroplast; Translocation; NP_BIND 105 112 ATP (BY SIMILARITY). SEQUENCE 895 AA; 103753 NW; DB290CFD201EADBC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                  ÷
                                                                                                                                                                                                                                                                                                                                    -
                                                                                                                                                                                                                                                                                                                                                                                                                             cleavage site."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gallus gallus (Chicken).
Eukaryota; Metazoa; Chor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FIBB_CHICK Q02020;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PR00906; SECA.
PROSITE; PS01312; SECA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF01043; SecA_protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AF022186; AAB82678.1; -.
InterPro; IPR000185; SecA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Archosauria; Aves;
                                                                                                                                                                                                                                                                                                                                                                                                                                              "The beta chain of chicken fibrinogen contains an atypical thrombin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 MYGGVTLHEG 11
                                                                                                                                               SIMILARITY: CONTAINS 1 FIBRINGEN C-TERMINAL DOMAIN.
                                                                                                                                                                                                    CHAINS, AND THUS EXPOSES THE N-TERMINAL POLYMERIZATION SITES RESPONSIBLE FOR THE FORMATION OF THE SOFT CLOT. THE SOFT CLOT IS CONVERTED INTO THE HARD CLOT BY EACTOR XIIIA WHICH CATALYZES THE EPSILON-(GAMMA-GLUTAMYL)LYSINE CROSS-LINKING BETWEEN GAMMA CHAINS
                                                                                                                                                                                                                                                                            (ALPHA, BETA, & GAMMA), LINKED TO EACH OTHER BY DISULFIDE BONDS MISCELLANEOUS: CONVERSION OF FIBRINGEN TO FIBRIN IS TRIGGERED THROMBIN, WHICH CLEAVES FIBRINOPEPTIDES A AND B FROM ALPHA & BE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY: BELONGS TO THE SECA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION: CHLOROPLAST.
                                                                                                                                                                                                                                                                                                                                  SUBUNIT: HEXAMER CONTAINING 2 SETS OF 3 NONIDENTICAL CHAINS
                                                                                                                                                                                                                                                                                                                                                       AGGREGATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MIGGIVLHEG
                                                                                                                                                                                   STRONGER) AND BETWEEN ALPHA CHAINS (WEAKER) OF DIFFERENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Neognathae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59
70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Galliformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          рв
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transport
                                                                                                                                                                                                                                                                                                                 BONDS
                                                                                                                                                                                                                                                                                 & BETA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                             THAT
                                                                                                                                                                                                                                                                                                    ВΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SQUE STATE OF THE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ERR1_YEAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ERR1_YEAST STANDARD; PRT; 437 AA. P42222; P42222; Created) 01-NOV-1995 (Rel. 32, Created) 01-OCT-1996 (Rel. 34, Last sequence update) 15-JUL-1998 (Rel. 36, Last annotation update) ENOLASE RELATED PROTEIN 1 (EC 4.2.1.11). ERR1 OR YMR3J3W OR YM9924.15.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NON_TER
the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                          This
                                                                                                                                                                                     MEDLINE-95304851; PubMed=7785338;
Pryde F.E., Huckle T.C., Louis E.J.;
"Sequence analysis of the right end of chromosome XV in cerevisiae: an insight into the structural and functiona significance of sub-telomeric repeat sequences.";
Yeast 11:371-382(1995).

Yeast 11:371-382(1995).
                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=S288C / AB972;
Churcher C.M., Louis
Submitted (NOV-1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Blood
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00147; fibrinogen_C;
SMART; SM00186; FBG; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HSSP;
                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 120-437
STRAIN=S288C / YP1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Saccharomycetales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Saccharomyces cerevisiae (Baker's yeast).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                     between
                                                                                                                                                -!- SIMILARITY: BELONGS TO THE ENOLASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  328 LYGGFTIHNEGN 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 MYGGVTLH-EGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A38463; A38463.
                                                                                                        SWISS-PROT entry is copyright. It is produced through a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P02675;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    coagulation; Plasma; Platelet; Glycoprotein;
                                                                                                                                                                        H(2)0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PS00514; FIBRIN_AG_C_DOMAIN;
                                                                                   the Swiss Institute of Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IPR002181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       367
463 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           197
201
205
215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18
17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69
80
84
197
201
229
244
410
367
52678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17
463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Saccharomycetaceae; Saccharomyces
                                                                                                                                                                                                                                                                                                                                                           FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                             ť
                                                                                                                                                                                                                                                                                                                                                                                                                      E.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        58.5%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fibrinogen_C
                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MW.
                                                                                                                                                                                                                                                                                                                                                                                                   Barrell B.G., Rajaı
e EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INTERCHAIN (WITH GAMMA) (BY
INTERCHAIN (WITH ALPHA) (BY
INTERCHAIN (WITH GAMMA) (BY
INTERCHAIN (WITH GAMMA) (BY
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC. . .) (POI
N-LINKED (GLCNAC. . . .) (POI
N: 2044CD49BA79EC7B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 41.5;
Pred. No. 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INTERCHAIN
INTERCHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SULFATION (BY SIMILARITY)
CLEAVAGE (BY THROMBIN; RE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FIBRINOPEPTIDE B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FIBRINOPEPTIDE B).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         W (WITH ALPHA)
W (WITH GAMMA)
W (WITH GAMMA)
W (WITH ALPHA)
W (WITH GAMMA)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
6:
                                                                                                                                                                                                                                                                                                                                                                                                                         Rajandream M.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                        databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                   functional .";
                                                                                       and the
                                                                                                                                                                                             PHOSPHOENOLPYRUVATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 463;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sulfation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RELEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           78)
78)
78)
78)
78)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Y SIMILARITY).
Y SIMILARITY).
                                                                                                                                                                                                                                                                              Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY).
SIMILARITY).
                                                                                         EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                         Walsh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                            collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                         S.V.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
```

SCTTTT

```
Pfam: PF00113; enolass, Pfam: PF001148; ENOLASE.
PRINTS; PR00148; ENOLASE: 1.
PROSITE; PS00154; ENOLASE: 1.
I Lyase; Glycolysis; Magnesium.
T ACT_SITE 160 160 My
T METAL 247 247 M/
T METAL 296 296 M
FT METAL 296 296 M
SEQUENCE 437 AA; 47312 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; Z54141; CAA90841.1; -.
EMBL; U23472; AAC48992.1; -.
HSSP; P00924; INEL.
SGD; S0005920; ERR1.
InterPro; IPR000941; Enolase.
Pfam; PF00113; enolase; 1.
                                                                                                         Young M., Tieu A., Kwong E.;

Young M., Tieu A., Kwong E.;

"Nel homolog gene expression in craniofacial anomalies.";

Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.

-I- SUBGURIT: HOMOTRIMER. BINDS TO PKC BETA-1 (BY SIMILARITY).

-I- SUBGELLULAR LOCATION: SECRETED (BY SIMILARITY).

-I- SUBGELLULAR LOCATION: SECRETED (BY SIMILARITY).

-I- SIMILARITY: CONTAINS 1 TSP N-TERMINAL DOMAIN.

-I- SIMILARITY: CONTAINS 5 VWFC DOMAINS.

-I- SIMILARITY: CONTAINS 6 EGF-LIKE DOMAINS.

-I- SIMILARITY: CONTAINS 6 EGF-LIKE DOMAINS.

-I- SIMILARITY: CONTAINS 6 EGF-LIKE DOMAINS.

-I- CAUTION: REF. 2 SEQUENCE DIFFERS FROM THAT SHOWN DUE TO FR IN POSITIONS 427 AND 771.
                                                                                                                                                                                                                                                                                                 TISSUE-Brain;

MEDLINE-97131504; PubMed-8975702;

Watanabe T.K., Katagiri T., Suzuki M., Shimizu F., Fujiwara '
Watanabe T.K., Katagiri T., Suzuki M., Shimizu F., Fujiwara '
Kanemoto N., Nakamura Y., Hirai Y., Maekawa H., Takahashi E.
"Cloning and characterization of two novel human cDNAs (NELL
"Cloning and characterization of two novel human cDNAs (NELL
NELL2) encoding proteins with six EGF-like repeats.";
Genomics 38:273-276(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NELL_HUMAN STANDARD; PRT; 810 AA. 0924832; 097472; 01-NOV-1997 (Rel. 35, Created) 20-AUG-2001 (Rel. 40, Last sequence update) 20-AUG-2001 (Rel. 40, Last annotation update) PROTEIN KINASE C-BINDING PROTEIN NELL1 PRECURSOR (NEL-RELATED PROTEIN 1).
 This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for comentities requires a license agreement (See http://www.isb-sib.ch/an or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                               Ting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NELL1 OR NRP1.
                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                             ENCE OF 383-810 FROM N.A.
K., Vastardis H., Mulliken J.B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CIYAGHRFHDGN 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity 50. 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57.7%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 41; DB Pred. No. 8.8; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BY SIMILARITY.

MAGNESIUM (BY SIMILARITY).

MAGNESIUM (BY SIMILARITY).

MAGNESIUM (BY SIMILARITY).

143D6EF66FB03D13 CRC64;
                                                                                                                                                                                                                                                                               Bertolami C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 дв
3.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (NEL-LIKE PROTEIN
                                                                                                                                                                                                                                                                                                                                                      (NELL1 and
                                                                                                                                                                                                                                                                               Z . ,
                                                                                                                                  FRAMESHIFTS
                                                                                                                                                                                                                                                                                                                                                                     : <sub>:</sub>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                         collaboration -
L outstation -
                  .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                               commercial
                                                            on
                                             o
                                             way
                                                            its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
   CARBOHYD
COMFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                               DISULFID DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                       DOMAIN
DISULFID
                                                                                                                                                                                        CARBOHYD
CARBOHYD
                                                                                                                                                                                                                     DISULFID CARBOHYD
                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE;
PROSITE;
PROSITE;
PROSITE;
PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
Pfam; PF0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Glycoprotein;
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D83017;
U57523;
P07204;
602319;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PF00008; EGF; 4.
PF00093; vwc; 2.
; SM00179; EGF_CA; 2.
; SM00001; EGF_like; 4.
; SM00282; LamG; 1.
; SM00210; TSPN; 1.
; SM00211; VWC; 3.
; SM00211; VWC_def; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PF00093;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E; PS00010; ASX_HYDROXYL; 3
E; PS00022; EGF_1; 1.
E; PS01186; EGF_2; 3.
E; PS01187; EGF_CA; 3.
E; PS01208; VWFC; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; IPR001881; EGF_Ca.
; IPR001791; Laminin_G.
; IPR003129; TSPN.
; IPR001007; VWFC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR000152; i
                  BAA11680.1; -.
AAB06946.1; ALT_FRAME.
2ADX.
   AA;
                              Asx_hydroxyl.
EGF-like.
EGF_Ca.
 89606 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           domain;
            EGF-LIKE 1.
EGF-LIKE 2, CALCIUD
EGF-LIKE 3.
EGF-LIKE 3.
EGF-LIKE 5, CALCIUD
EGF-LIKE 5, CALCIUD
EGF-LIKE 6, CALCIUD
EGF-LIKE 5, CALCIUD
EGF-LIKE 6, CALCIUD
EGF-LIKE 6, CALCIUD
EGF-LIKE 6, CALCIUD
EGF-LIKE 7, CALCIUD
EGF-LIKE 6, CALCIUD
EGF-LIKED (ALCIUTY)
EY SIMILARITY
EY SIMILAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL.
PROTEIN KINASE (
TSP N-TERMINAL.
WWFC 1.
VWFC 2.
    549465EA3F7AEED0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KINASE C-BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CALCIUM-BINDING CALCIUM-BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CALCIUM-BINDING
    CRC64;
                                                        (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROTEIN NELL1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL).
```

RESULT

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence:
  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                       Score
  Query
Match
                                                                                                                                                                                                                            9:
10:
11:
12:
13:
                                                                                                                                                                                                                                                                                                                            SPTREMBL_17:*
1: sp_archea:*
 BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-335-581A-34
71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           January 2, 2002, 20:52:02;
                                                                                                                                                                                                                                                                                                                                                                                                                        473505 segs, 146272329 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                 sp_organelle:*
sp_phage:*
                                                                                                                                                                                                                                                                                       sp_mammal:*
                                                                                                                                                                                                                                                                                                       sp_human:*
                                                                                                                                                                                                                                                                                                                     sp_bacteria:*
                                                                                                                                                                                                                          sp_virus:*
sp_vertebrate:*
sp_unclassified:*
                                                                                                                                                                                                                                                                                 sp_mhc:*
                                                                                                                                                                                                                                                                                                sp_invertebrate:*
                                                                                                                                                                                                                                                                                                               sp_fungi:*
                                                                                                                                                                                                                                                 sp_plant:*
sp_rodent:*
                                                                                                                                                        Length
 ВВ
  085217
0985217
005157
005157
006537
006531
006533
006533
006533
0095016
0995016
099716
099749
0998314
0997453
0954696
                                                                                                                                                       ij
                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.5
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Search time 92.66 Seconds (without alignments)
18.943 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                          473505
      085217 staphylococ O9r5x4 staphylococ O5157 staphylococ O53678 staphylococ O6531 staphylococ O6532 staphylococ O6533 staphylococ O6534 staphylococ O6535 staphylococ O9f016 staphylococ O9ezm4 staphylococ O9ezm4 staphylococ O99t49 staphylococ O9s5x4 streptococc O9r931 streptococc O54779 streptococc O54779 streptococc O57753 streptococc O57753 streptococc
Q9r931
Q54696
Q54779
Q57453
P97163
                                                                                                                                                 Description
streptococc
```

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	- 21	20
39	39	39	39	39	39	40	40	40	40	40	41	41	41	41	41	42	44	44	47	51	51	51	52	52	58
54.9	•	•	•	•	•	٠	٠	•	•			•	•	•	•	59.2	•	•	•		•		•	73.2	81.7
623	622	593	270	156	63	968	258	258	258	241	1353	1266	437	347	335	266	225	225	157	260	260	260	261	260	179
Ŋ	N	N	N	N	N	4	ν	N	N	ຎ	4	4	w	4	N	13	N	N	N	N	N	2	N	N	N
Q9APG7	Q9APG5	Q44099	066049	Q9JWR7	Q9EW93	Q9NZC0	085382	Q9EZM3	Q9ZNF2	Q53585	Q9BY58	Q9NYE6	Q12007	Q9NWL4	Q9A5S5	013116	Q99ZZ1	Q9L921	Q99TP7	Q54739	Q54971	Q54738	Q9EZM8	Q99T46	Q52075
	Q9apg5 anaplasma m	Q44099 anaplasma m	_	Q9jwr7 bacillus ha	Q9ew93 streptomyce	Q9nzc0 homo sapien	085382 staphylococ	Q9ezm3 staphylococ	Q9znf2 staphylococ			Q9nye6 homo sapien		Q9nwl4 homo sapien	Q9a5s5 caulobacter	6	Q99zzl streptococc	_	Q99tp7 staphylococ	Q54739 streptococc	Q54971 streptococc	Q54738 streptococc	Q9ezm8 staphylococ	Q99t46 staphylococ	Q52075 plasmid pib

ALIGNMENTS

Qу	W B O	S C C C C C C C C C C C C C C C C C C C	RESULT
1 CMYGGVTLHEGN 12 	91.5%; Score 65; DB 2; Length 268; Best Local Similarity 91.7%; Pred. No. 0.00061; Matches 11; Conservative 0; Mismatches 1; Indels 0; Gaps 0;	OBS217 PRELIMINARY; PRT; 268 AA. OBS217; O1-NOV-1998 (TREMBLrel. O8, Created) O1-NOV-1998 (TREMBLrel. O8, Last sequence update) O1-NOV-1998 (TREMBLrel. 17, Last sequence update) O1-WOV-1998 (TREMB	TOTAL 1

RESULT

```
RESULTI
OF STATE

RESULTI
OF STATE

AC OF STATE

                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                          Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        005157
                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1;
PROSITE; PS00278; STAPH_STREP_TOXIN_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Edwards V.M., Deringer J.R., Callantine S.D., Deobald C.F., Berger P.H., Kapur V., Stauffacher C.V., Bohach G.A.; Submitted (FEB-1997) to the EMBL/GenBank/DDBJ databases. EMBL; U91526; AAB50248.1; -. HSSP, P23313; 1JCK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUL-1997 (TremBLrel. 04, Created)
01-JUL-1997 (TremBLrel. 04, Last sequence update)
01-JUN-2001 (TremBLrel. 17, Last annotation update)
TYPE C ENTEROTOXIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Van den Bussche R.A., Lyon J.D., Bohach G.A.;

Wal. Phylogenet. Evol. 2:281-292(1993).

HSSP; p34071; 1SE2.

InterPro; IPR001961; Staph_Strep_toxin.

Pfam; PF01123; Stap_Strp_toxin; 1.

PRINTS; PR00279; BACTRLTOXIN.

PROSITE; PS00279; STAPH_STREP_TOXIN_1; 1.

PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.

PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9R5X4;
Q9R5X4;
01-MAY-2000
                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. STRAIN-95-011195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacillus/Staphylococcus group; Staphylococcus NCBI_TaxID=1285;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Staphylococcus intermedius.
Bacteria: Firmicutes: Bacillus/Clostridium group:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. MEDLINE=94325995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria; Firmicutes; Bacillus/Clostridium group; Bacillus/Staphylococcus group.
NCBI_TaxID=1279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-JUN-2001 (TrEMBLrel. 17, 01-JUN-2001 (TrEMBLrel. TOXIN.
                                                                        110 CMYGGITKHEGN 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CMYGGVTLHEGN 12
                                                                                                                        CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CMYGGITKHEGN 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                     239
                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                     ΑA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PubMed=8049778;
                                                                                                                                                                                                                                                                                                     27536 MW;
                                                                                                                                                                                                90.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     90.1%;
83.3%;
                                                                                                                                                                                             Score 64;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 64; DB 2;
Pred. No. 0.00079;
                                                                                                                                                                                                                                                                                                     D660644660DE4191 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                234
                                                                                                                                                                                             0.00081;
                                                                                                                                                                                                                             DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Å
                                                                                                                                                                                                                     Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 234;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

```
RESULTION OF STATE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q53678
AC Q55
AC Q56
AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.

MEDIINE-94011313; PubMed-8406814;

MART J.C., Lyon J.D., Roberson J.R., Lupher M., Bohach G.A.;

"Characterization of novel type C staphylococcal enterotoxins:

"Infect. Immun. 61:4254-4262(1993).

EMBL; L13376; AAAA6620.1;

PR HSSP; P34071; 1SE2.

InterPro; IPR001961; Staph_Strep_toxin.

PR FAMP F00123; Stap_Strp_toxin; 1.

PROSITE; PS00279; BACTRLTOXIN.

PROSITE; PS00279; STAPH_STREP_TOXIN.1; 1.

PROSITE; PS00278; STAPH_STREP_TOXIN.2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 10; Conser
                                                                                                PYROGENIC EXOTOXINS ARE ALL RELATED.

EMBL; L13774; AAA26618.1; -.

HSSP; P34071; ISE2.

InterPro; IPR001961; Staph_Strep_toxin.

Pfam; PF01123; Stap_Strp_toxin; 1.

PRINTS; PR00279; BACTRITOXIN.

PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.

PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                    ENLENCIONES AUTROS.
Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacteria; Firmicutes; Bacillus/Staphylococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q53678;
Q53678;
01-NOV-1996
01-NOV-1996
01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q06531 PRELIMINARY; PRT; 239 AA. Q06531; 01-NOV-1996 (TrEMBLrel. 01, Created) 01-NOV-1996 (TrEMBLrel. 01, Last sequence update) 01-JUN-2001 (TrEMBLrel. 17, Last annotation update) ENTEROTOXIN TYPE C-4 (SEC4446) (FRAGMENT).
                                                                     Enterotoxin; Toxin; Superantigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-4446;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENTEROTOXIN (FRAGMENT).
Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacillus/Staphylococcus group; Staphylococcus.
NCBI_TaxID-1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Enterotoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110 CMYGGITKHEGN 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CMYGGVTLHEGN 12
   239 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. 01, (TrEMBLrel. 17, (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA;
       27612 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1
27618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90.1%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 64; I
Pred. No. 0.
   BB7BD6204731ED24 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A13E7EB25C6989C2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      239
                                                                                                                                                                                                                                                                                                                                                                                                    ENTEROTOXINS AND S. PYOGENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ).00081;
1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
```

```
RESULT CONTROL OF THE PROPERTY OF THE PROPERTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STAPHYLOCOCCAL FOOD POISONING SYNDROME.

-I- SIMILARITY: THE DIFFERENT S. AUREUS ENTEROTOXINS PYROGENIC EXOTOXINS ARE ALL RELATED.

EMBL; L13375; AAA26619.1; -.

HSSP; P34071; 1SE2.

InterPro; IPR001961; Staph_Strep_toxin.

Pfam; PF01123; Stap_Strp_toxin; 1.
                                                                                                                                                                                                                              Q06533 PRELIMINARY; PRT; 239 AA. Q06533; Q1-NOV-1996 (TrEMBLrel. 01, Created) 01-NOV-1996 (TrEMBLrel. 01, Last sequence update) 01-JUN-2001 (TrEMBLrel. 17, Last annotation update) ENTEROTOXIN TYPE C (SECCOPELAND) (FRAGMENT).
                                                                                                                         Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacillus/Staphylococcus group; Staphylococcus.
NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1;
PROSITE; PS00278; STAPH_STREP_TOXIN_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Marr J.C., Lyon J.D., Roberson J.R., Lupher M., Bohach G.A.; "Characterization of novel type C staphylococcal enterotoxins: biological and evolutionary implications."; Infect. Immun. 61:4254-4262(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Firmicutes; Bacillus/Clostridium group; Bacillus/Staphylococcus group; Staphylococcus. NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
ENTEROTOXIN TYPE C-7 (SEC740N) (FRAGMENT).
STRAIN-MNCOPELAND;
MEDLINE-94011313; PubMed-8406814;
Marr J.C., Lyon J.D., Roberson J.
                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Staphylococcus aureus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q06532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Enterotoxin; Toxin; Superantigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=94011313; PubMed=8406814;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CMYGGITKHEGN 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CMYGGITKHEGN 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      239 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27642 MW; C77009F46BC8D645 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90.1%;
83.3%;
     Roberson J.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 64; DB
Pred. No. 0.00
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 64; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
Lupher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2;
0.00081;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ⋛
     M., Bohach G.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AND S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PYOGENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
PRESULT RESULT R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                              Matches
                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q06534
Q06534;
Q1-NOV-1996
Q1-NOV-1996
Q1-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; L1378; AAA26622.1;
HSSP; P34071; ISTE.
InterPro; IRR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Marr J.C., Lyon J.D., Roberson J.R., Lupher M., Bohach G.A.; "Characterization of novel type C staphylococcal enterotoxins: biological and evolutionary implications."; Infect. Immun. 61:4254-4262(1993).

-i- DISEASE: STAPHYLOCOCCAL ENTEROTOXINS CAUSE THE INTOXICATION STAPHYLOCOCCAL FOOD POISONING SYNDROME.

-i- SIMILARITY: THE DIFFERENT S. AUREUS ENTEROTOXINS AND S. PY
                                                                                                                                                                                                                 Enterotoxin; Toxin; NON_TER 1 1 SEQUENCE 239 AA;
                                                                                                                                                                                                                                                                                                                                         InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Staphylococcus aureus.
Bacteria; Firmicutes; Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01.NOV-1996 (TIEMBLEEL 01, Created)
01.NOV-1996 (TIEMBLEEL 01, Last sequence update)
01.UN-2001 (TIEMBLEEL 17, Last annotation updat
ENTEROTOXIN TYPE C (SECOVINE) (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; L13379; AAA26623.1; HSSP; P34071; 1SE2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. MEDLINE-94011313; PubMed-8406814;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacillus/Staphylococcus
NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Enterotoxin; Toxin; Superantigen. NON_TER 1 1
                                                                                                                                                                                                                                                                                         PROSITE; PS00277; STAPH_STREP_TOXIN_1;
PROSITE; PS00278; STAPH_STREP_TOXIN_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             110
110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 CMYGGVTLHEGN 12
                                              1 CMYGGVTLHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PYROGENIC EXOTOXINS ARE ALL RELATED
CMYGGITKHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CMYGGITKHEGN 121
                                                                                              10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         l Similarity
10; Conserv
                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   239 AA; 27651 MW; A21A954386AE8625 CRC64;
                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
121
                                           12
                                                                                                                                                                                                                      27517 MW;
                                                                                                                                                                                                                                                                  Superantigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                90.1%;
83.3%;
                                                                                                                   90.1%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  group;
                                                                                                                   Score 64; DB 2;
Pred. No. 0.00081;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 64; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                      F354742619C8D196 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Staphylococcus.
                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
0.00081;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                          Length 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           THE INTOXICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THE INTOXICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND S. PYOGENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AND S. PYOGENES
                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 10
Query Match
                                                                                                                                                                                                                                                                                               O9FOL6 PRELIMINARY;
O9FOL6;
01-MAR-2001 (TTEMBLTel. 1
01-MAR-2001 (TTEMBLTEL 1
01-JUN-2001 (TTEMBLTEL 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q06535;
01-NOV-1996
01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U1-NOV-1996 (TrEMBLrel. 01, 01-NOV-1996 (TrEMBLrel. 01, 01-JUN-2001 (TrEMBLrel. 17, 01-JUN-2001) (TrEMBLrel. 17, ENTEROTOXIN TYPE C-3 (SEC3) Stanbulococco.
                                                  Staphylococcus aureus encoding multiple
J. Bacteriol. 183:63-70(2001).
EMBL; AF217235; AAG29599.1; -.
Interpro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR001961; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLITOXIN.
PROSITE; PS00277; STARH_STREP_TOXIN_1;
PROSITE; PS00278; STAPH_STREP_TOXIN_2;
EnterPotoxin; Toxin; Superantigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    biological and evolutionary implications.";
Infect. Immun. 61:4254-4262(1993).
-I- DISEASE: STAPHYLOCOCCAL ENTEROTOXINS CAUSE THE INTOXICATION
STAPHYLOCOCCAL FOOD POISONING SYNDROME.
-I- SIMILARITY: THE DIFFERENT S. AUREUS ENTEROTOXINS AND S. PYOGENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Firmicutes; Bacillus/Clostridium group; Bacillus/Staphylococcus group; Staphylococcus. NCBI_TaxID=1280;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q06535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; L13377; AAA26621.1; HSSP; P23313; 1JCK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. STRAIN-FRI 909;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Staphylococcus aureus.
                                                                                                                                              Meaney W.J., Smyth C.J.;
                                                                                                                                                           Fitzgerald J.R., Monday S.R.,
                                                                                                                                                                        MEDLINE=20566668; PubMed=11114901;
                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                            Bacteria; Firmicutes; Bacillus/Clostridium group; Bacillus/Staphylococcus group; Staphylococcus.
                                                                                                                                                                                                                                                        Staphylococcus aureus
                                                                                                                                                                                                                                                                      SEC-BOV
                                                                                                                                                                                                                                                                                   STAPHYLOCOCCAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Enterotoxin; Toxin; NON_TER 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Marr J.C., Lyon J.D., Roberson J.R., Lupher M., Characterization of novel type C staphylococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=94011313; PubMed=8406814;
                                                                                                                                   "Characterization of a putative
                                                                                                                                                                                                                                                                                                                                                                                                                      110
                                                                                                                                                                                                                                                                                                                                                                               10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                    1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PYROGENIC EXOTOXINS ARE ALL RELATED.
                                                                                                                                                                                                                                                                                                                                                                                                                      CMYGGITKHEGN 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                   ENTEROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA;
                                        31267 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27648 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   90.1%;
                                                                                                                                                                                                                                                                                 16, Created)
16, Last sequence update)
17, Last annotation update)
XIN C-BOVINE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
(FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 64; DB. Pred. No. 0.0001; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                            Foster T.J.,
                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CC3CB3B04E4119E0 CRC64;
                                        3493F6228B042F10 CRC64;
                                                                                                                                   pathogenicity island from bovine
  64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         239
                                                                                                                                                                                                                                                                                                                                                    271 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
0.00081;
  멂
                                                                                                                      superantigens.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                             Bohach G.A., Hartigan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 239;
 Length 271;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bohach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        enterotoxins:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     G.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                               ש
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
```

```
RESULT
Q99SU3
ID Q9
AC Q5
DT 01
DT 0.
DT 0.
GN S
OS S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                           Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A LO DO COMBRET DE RESERVA DE RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 83.3 Matches 10; Conservative
                                                                             Q99SU3;
Q99SU3;
01-JUN-2001 (TrEMBLrel. 1
01-JUN-2001 (TrEMBLrel. 1
01-JUN-2001 (TrEMBLrel. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPECIES-S.aureus; STRAIN-A900322;
MEDLINE-20571956; PubMed-1112352;
Jarraud S., Peyrat M.A., Lim A., Tristan A., Bes M.,
Etienne J., Vandenesch F., Bonneville M., Lina G.;
egc, A highly prevalent operon of enterotoxin gene,
nursery of superantigens in Staphylococcus aureus.";
J. Immunol. 166:669-677(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SPĒCIES=S.aureus subsp. aureus N315;
Kuroda M., Ohta T., Uchiyama I., Baba T., Yuzawa H., Kobayash:
Kuroda M., Ohta T., Uchiyama I., Baba T., Lian J., Ito T., Kanar
Cui L., Oguchi A., Aoki K.I., Nagai Y., Lian J., Ito T., Kanar
Matsumaru H., Maruyama A., Murakami H., Hosoyama A., Mizutani
Takahashi N.K., Sawano T., Inoue R.I., Kaito C., Sekimizu K.,
Hirakawa H., Kuhara S., Goto S., Yabuzaki J., Kanehisa M.,
Yamashita A., Oshima K., Furuya K., Yoshino C., Shiba T., Hati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Staphylococcus aureus subsp. aureus N315.
Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacillus/Staphylococcus group; Staphylococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-MAR-2001 (TrEMBLrel.
01-MAR-2001 (TrEMBLrel.
01-JUN-2001 (TrEMBLrel.
     Staphylococcus
                           ENTEROTOXIN P.
SEP OR SA1761.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Complete proteome. SEQUENCE 258 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lancet 357:1225-1240(2001).

EMBL; AF285760; AAG36556.1; -.

EMBL; AF0283135; BAB42911.1; -.

InterPro; IPR001961; Staph_Strep_toxin.

Pfam; PF01123; Stap_Strp_toxin; 1.

PRINTS; PR00279; BAGTRLTOXIN.

PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Whole genome sequencing of meticillin-resistant Staphylococcus aureus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacillus/Staphylococcus
NCBI_TaxID=1280, 158879;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Staphylococcus aureus, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEK (ENTEROTOXIN SEN)
SEK OR SEN OR SA1643.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9EZM4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9EZM4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Yamashita A.,
Ogasawara N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                             133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142
                                                                                                                                                                                                                                                  12
                                                                                                                                                                                                                                                                                                                                                                              1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CMYGGITKHEGN 153
                                                                                                                                                                                                                                                                                                                             CLYGGVTIHDGN 144
                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hayashi H., Hiramatsu K.;
        aureus subsp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29676
                                                                                                                                                                                                                                                                                                                                                                                                                                                              88.7%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83.3%;
                                                                                  17,
17,
17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16,
16,
17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , WM
                                                                                  Last sequence update)
Last annotation updat
                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                Score 63; DB
Pred. No. 0.00
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
     aureus N315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 0.00
l; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8A6C074F3E1F82D2 CRC64;
                                                                                                                                                                                              260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.00094;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A
                                                                                                                                                                                              A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .0013;
                                                                                  update)
                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 258;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mizutani-Ui Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kobayashi I.,
T., Kanamori M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mougel C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             forms a putative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T., Hattori M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
RESULT
Q9S5Z4
ID Q9
AC Q9
DT 01
                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                   5
                                                                                                                                                  Query Match 85.9
Best Local Similarity 83.3
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q99T49 PRELIMINARY;
Q99T49;
O1-JUN-2001 (TrEMBLrel. 1
O1-JUN-2001 (TrEMBLrel. 1
O1-JUN-2001 (TrEMBLrel. 1
ENTEROTOXIN YENTZ.
Q9S5Z4
Q9S5Z4;
01-MAY-2000
                                                                                                                                                                                                                                            Kuroda M., Ohta T., Uchiyama I., Baba T., Yuzawa H., Kobayashi I., Cui L., Oguchi A., Aoki K.I., Nagai Y., Lian J., Ito T., Kanamori Natsumaru H., Maruyama A., Murakami H., Hosoyama A., Mizutani-Ui Y. Takahashi N.K., Sawano T., Inoue R.I., Kaito C., Sekimizu K., Hirakawa H., Kuhara S., Goto S., Yabuzaki J., Kanehisa M., Yamashita A., Oshima K., Furuya K., Yoshino C., Shiba T., Hattori Nogasawara N., Hayashi H., Hiramatsu K.;
"Whole genome sequencing of meticillin-resistant Staphylococcus aureus."
"Lancet 357:1225-1240(2001).
EMBL: AP003115; BAB42912.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                           Staphylococcus aureus subsp. aureus N315.
Bacteria; Firmicutes; Bacillus/clostridium group;
Bacillus/Staphylococcus group; Staphylococcus.
NCBI_TaxID-158879;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matsumbru H., Maruyama A., Murakami H., Hosoyama A., Mizutani Ui Y., Takahbashi N.K., Sawano T., Inoue R.I., Kaito C., Sekimizu K., Hirakawa H., Kuhara S., Goto S., Yabuzaki J., Kanehisa M., Yamashita A., Oshima K., Furuya K., Yoshino C., Shiba T., Hattori M., Ogasawara N., Hayashi H., Hiramatsu K.;
                                                                                                                                                                                                                     Complete proteome. SEQUENCE 136 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Whole genome sequencing of meticillin-resistant Staphylococcus aureus.";
Lancet 357:1225-1240(2001).
EMBL; AP003135; BAB43036.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YENT2 OR SA1644.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Complete proteome. SEQUENCE 260 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kuroda M., Ohta T., Uchiyama I., Baba T.,
Cui L., Oguchi A., Aoki K.I., Nagai Y., L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacillus/Staphylococcus
NCBI_TaxID=158879;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13
                                                      14
                                                                                                տ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CMYGGVTLHEGN 12
||||||||| |
CMYGGVTLHDNN 144
                                                                                             CMYGGVTEHDGN 16
                                                                                                                        CMYGGVTLHEGN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Firmicutes; Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            260 AA;
 (TrEMBLrel. 13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                             PRELIMINARY;
                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                      15945 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29708 MW;
                                                                                                                                                                85.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       87.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                group; Staphylococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
Last sequence update)
Last annotation update)
                                                                                                                                                  Score 61; DB Pred. No. 0.00 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 62; DB 2;
Pred. No. 0.0021;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                            PRT;
                                                                                                                                                                                                                      D7CBC619820C45FE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            087C5B4EC028CFDB CRC64
                            222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136 AA
                                                                                                                                                                DB 2;
0.0015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lian J., Ito T., Kanamori
                            ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 260
                                                                                                                                                                            Length 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                       Kanamori M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kanamori M.,
                                                                                                                                                                                                                                                                                                                   Hattori M
                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                   Gaps
                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
RESULT

Q99

1 DP 91

1 DP 92

1 DP 92

1 DP 92

1 DP 92

1 DP 93

1 DP 93

1 DP 93

1 DP 93

2 OS SEE

OC SE

OC SEE

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9R931 PRELIMINARY;
Q9R931;
01-MAY-2000 (TrEMBLrel. 13, C:
01-MAY-2000 (TrEMBLrel. 13, L:
01-JUN-2001 (TrEMBLrel. 17, L:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF01123; Stap_Strep_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1; PR05ITE; PS00278; STAPH_STREP_TOXIN_2; NON_TER 1 1
NON_TER 222 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bessen D.E., Izzo M.W., Fiorentino T.R., Carin "Genetic linkage of exotoxin alleles and emm g tropisms in group A streptococci.", Submitted (OCT-1997) to the EMBL/GenBank/DDBJ EMBL; AF029051; AAD21315.1; -
                                                                                                                               NON_TER
                                                                                                                                                                   InterPro; IPR001561; Staph_Strep_toxin.
Pfam; PF01123; Stap_Strp_toxin; 1.
PRINTS; PR00279; BACTRLTOXIN.
PROSITE; PS00277; STAPH_STREP_TOXIN_1; 1.
PROSITE; PS00278; STAPH_STREP_TOXIN_2; 1.
                                                                                                                                                                                                                                                                                  tropism in group A streptococci.", Submitted (MAR-1998) to the EMBL/GenBank/DDBJ EMBL; AF055698; AAD11624.1; -- HSSP; P08095; 1B1Z.
                                                                                                                                                                                                                                                                                                                                                                      Bessen D.E., Izzo M.W., fiorentino T.R., Hollingshead S.K., Beall B.; "Genetic linkage of exotoxin alleles and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-MAY-2000 (TrEMBLrel. 13, 01-JUN-2001 (TrEMBLrel. 17, EXOTOXIN TYPE A (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Streptococcus pyogenes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SPEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Streptococcus pyogenes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPEA.
                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-D709;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EXOTOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-D633;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         108 CIYGGVTNHEGN 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001961; Staph_Strep_toxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CMYGGVTLHEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
Similarity 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     222
222 AA;
                                                                                                          222
222 AA;
  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12
                                                                                                          222
25759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     222
25884 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84.5%;
                      84.5%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacillus/Clostridium group; Streptococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacillus/Clostridium
                                                                                                          MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation updat
1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 60; DB 2;
Pred. No. 0.004;
1; Mismatches
                      Score 60; E
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                            48BB7ADDCD91FBA3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121F8460992818F8 CRC64;
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               222
                                           DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Caringal
emm gene
                      .004;
                                                                                                                                                                                                                                                                                                                                                                          emm
                                                                                                                                                                                                                                                                                                                                                                                                                 Caringal R.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        databases
                                                                                                                                                                                                                                                                                                                                  databases
                                           Length 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R.M., Beall B.;
markers for tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Streptococcaceae;
Indels
                                                                                                                                                                                                                                                                                                                                                                             for
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                             tissue
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

Db Qy Search completed: January 2, 2002, 20:52:02 Job time: 227 sec 1 CMYGGVTLHEGN 12 |:+|||| ||| 108 CIYGGVTNHEGN 119

Page 6